C.S.R. for SCIENCE

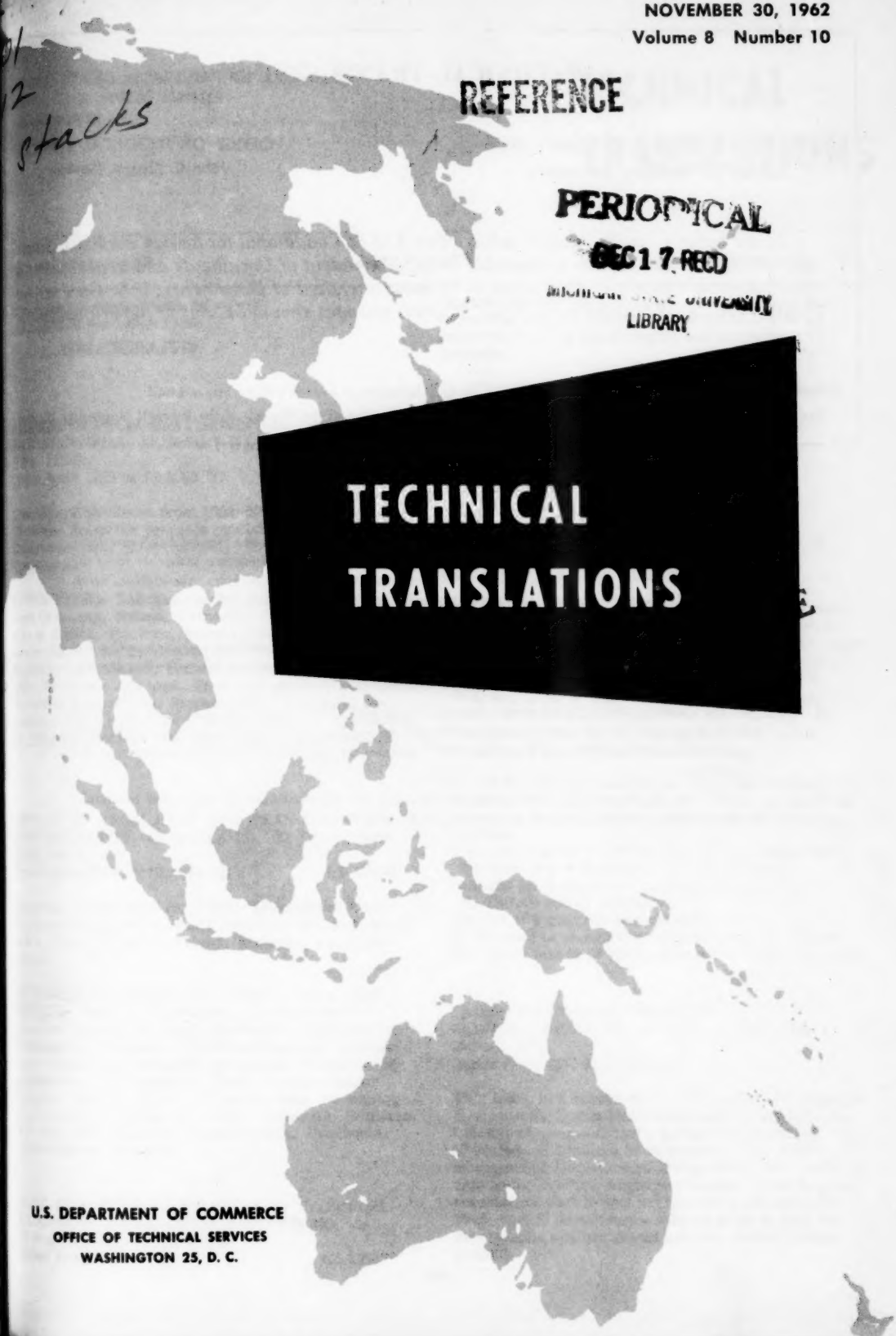
NOVEMBER 30, 1962
Volume 8 Number 10

stacks

REFERENCE

PERIODICAL
DEC 17 RECD
LIBRARY

TECHNICAL TRANSLATIONS



U.S. DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, Secretary

OFFICE OF TECHNICAL SERVICES
John C. Green, Director

Issued twice a month. Annual subscription $12 ($4 additional for foreign mailing). Single copy 60 cents. Make remittance payable to Superintendent of Documents and mail either to a Department of Commerce field office or to Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. Address changes should be sent to Superintendent of Documents.

Contents may be reprinted freely. Mention of source will be appreciated.
Use of funds for printing this publication approved by the Director of the Bureau of the Budget, November 22, 1961

TECHNICAL TRANSLATIONS is published in cooperation with the Special Libraries Association Translations Center to list and abstract translated technical literature available from the Office of Technical Services, the Library of Congress, the Special Libraries Association, cooperating foreign governments, commercial translators and publishers, universities, and other sources.

The Special Libraries Association is responsible for collecting translations from non-Government sources, both domestic and foreign; the Office of Technical Services for collecting translations from both U.S. and foreign government sources since 1940.

The material available from the Office of Technical Services generally has been translated by other agencies of the Government and by private organizations and turned over to OTS for reproduction and distribution. Therefore, OTS assumes no responsibility for the accuracy of the translations.

OTS provides reference service for the location and identification of translated materials, both completed translations and translations in process.

UNITED STATES DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

Volume 8, Number 10 Pages 941-1077 November 30, 1962

*Descriptors marked with an asterik are listed in the subject index.

BIBLIOGRAPHY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS (2). 2 July 62 [35]p. JPRS: 14322.
Order from OTS or SLA $3.60 62-25597

Consists of abstracts from 1961-62 issues of East European Scientific journals published in Bulgaria, Czechoslovakia, East Germany, Poland, Rumania, and Yugoslavia.

DESCRIPTORS: *Abstracts, Bulgaria, Czechoslovakia, East Germany, Poland, Rumania, Yugoslavia, Atmosphere, Labor, Rockets, Insects, Control systems, Mathematical logic, Automation, Magnetic amplifiers, Statistical processes, Pneumatic devices, Instrumentation, Radiation sickness, Thermodynamics, Non-linear differential equations, Biochemistry, Scientific research, Radio astronomy, Water supplies, Economics, Geography, Nuclear reactors, Vision, Astronautics.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS (3). 31 July 62 [46]p. JPRS: 14671.
Order from OTS or SLA $4.60 62-32196

Consists of abstracts from 1961-62 issues of East European scientific journals published in Czechoslovakia, East Germany, Poland, Rumania, and Yugoslavia.

DESCRIPTORS: *Abstracts, Czechoslovakia, East Germany, Poland, Yugoslavia, Blood circulation, Cerebral cortex, Bacteria, Psychiatry, Agriculture, Antibiotics, Ceramics, Servomechanisms, Automation, Physiology, Scientific personnel, Scientific organizations, Astronautics, Food, Physics, Radar images, Guided missiles, Geodetic data, Seismological stations, Geological survey, Catalysis, Silicates, Rockets, Pharmacology, Public health, Trachoma, Tuberculosis, Malaria.

EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS: BIBLIOGRAPHIC LISTINGS NO. 3. 23 Aug 62 [195]p. JPRS: 14935
Order from OTS or SLA $13.50 62-32557

Contains bibliographic listings of authored articles appearing in table of contents of 1962 issues of selected East European scientific and technical journals.

DESCRIPTORS: Bibliography, *Biology, *Chemistry, *Computers, *Engineering, *Geology, *Mathematics, *Mechanics, *Medicine, *Meteorology, *Nuclear physics, *Psychology, *Veterinary medicine

NLL TRANSLATIONS BULLETIN, 1962, VOL. 4, NO. 9, P. 797-903. Sep 62, 1v.
Order from HMSO $0.77, $9.86/year

This bulletin includes reports on visits, translations available from Lending Library Unit loan collection, miscellaneous announcements, and trans. of ##Priroda (USSR) 1962 [v. 51] no. 3, p. 3-8; Bibliotekar' (USSR) 1962, no. 4, p. 8; Khim[icheskie] Volokna (USSR) 1962, no. 1, p. 3-5; and from Ekonomicheskaya Gazeta (USSR) 1962 [no. 14(35) p. 28-30; no. 16[37] p. 22. ##Another trans. is available from OTS $1.25 in 62-11718, JPRS-14715, 3 Aug 62, 38p.

DESCRIPTORS: *Translations, Scientific reports, Scientific research, Agriculture, Irrigation systems, Libraries, Synthetic fibers, Production, Education.
Contents:
##A year of great achievements; general meeting of the Academy of Sciences USSR (6-7 Feb 62)
Valuable work about irrigated agriculture, by N. Tsitsin and K. Ovcharov
The eve of a glorious anniversary
On the road of technical progress, by I. G. Shimko
The effectiveness of Soviet education, by S. Strumilin.

Library of Contress, Washington, D. C.
MONTHLY INDEX OF RUSSIAN ACCESSIONS.
Oct 62, 325p.
Order from GPO $12.00/year

This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the title in the original language preceded by its English translation; Part B lists periodicals published after 1946; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET TRACTORS AND AGRICULTURAL MACHINERY (34). 31 July 62 [22]p. JPRS: 14669.
Order from OTS or SLA $2.60 62-32194

Partial trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 3, p. 52-55, 57-60, 63-80; and from Sovetskaya Rossiya (USSR) 1962, 21 Feb; Pravda, Moscow (USSR) 1962, 12 Mar; 15 Mar

DESCRIPTORS: *Industrial research, *Tractors, *Agricultural machinery, Production, Industrial plants, Agriculture, Machines, Seeds, Soils, Powders, Magnetic properties, Classification, *Trailers Axle shafts, Beets, Fertilizers, Disks, Potatoes, Plants, Pest control, Spray tanks, Herbicides.

Contents:
Production of KKKh-3 combine-harvesters bogged down
Producing wide-cut harvesters at the Tula combine harvester plant, by E. Zolotov
Tasks of the Rostov agricultural machinery plant, by A. Mekulov and A. Navozov
The NK-4 mounted grain combine harvester, by L. N. Anashkina
The PPN-40 mounted subsoil plow, by Ya. Z. Zhilitskii and N. P. Losev
The P5-35E plow, by S. F. Chellei
The KEM-1 electromagnetic classifier, by E. N. Konyushkoe
The FS-0.9 orchard rotary cultivator, by A. S. Patsyuk
The DT-20V tractor, by G. V. Lebedinskii and S. E. Libtsis
The NAMI -787 single-axle tractor trailer with driving axle, by A. I. Skerdzhev and others
The 2SPS-6 sugar beet planter with a thinning attachment, by B. F. Kuznetsov
The STS-15 self-loading fertilizer broadcast spreader, by D. S. Gladshtein
The BDN-1.3 and BDN-2.2M mounted disk harrows, by Ya. Z. Zhilitskii and N. I. Gerasimov
The KMP-2 potato harvesting machine, by B. I. Maksimov
The ONU kometa mounted all-purpose duster, by E. N. Kontsevaya
The OND-100 sprayer, by A. S. Patsyuk.

SOVIET SCIENCE AND AGRICULTURE. 10 Sep 62 [32]p. JPRS: 15204.
Order from OTS or SLA $3.60 62-32893

Trans. of #Pochvovedenie (USSR) 1962, no. 4, p. 103-108; Zashchita Rastenii ot Vreditelei i Bolezney (USSR) 1961 [v. 6] no. 11, p. 23-24; Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1961, no. 8, p. 137-139; and from Zarya Vostoka (USSR) 1961 [no. 196] 15 July, p. 2.

DESCRIPTORS: *Agriculture, *Soils, Microorganisms, *Microbiology, Plants, *Herbicides, Chemists, Siberia.

Contents:
Conference on the Problem "Soil Microorganisms and their Role in Crop Yields", Moscow U., 26-29 Dec 61, by N. Sushkina
Conference resolutions on microbiology in agriculture
From the work of the All-Union Scientific Research Institute of Agricultural Microbiology, by M. I. Prokhorov
Weeds and herbicides, by S. Karumidze
Chemists of the Far Eastern Branch of the Siberian Department of the Academy of Sciences USSR--to agriculture, by E. P. Ozhigov.

THE TASKS OF PLANT PHYSIOLOGY IN THE LIGHT OF THE RESOLUTIONS OF THE MARCH PLENARY SESSION OF THE CENTRAL COMMITTEE OF THE CPSU. 17 Sep 62 [7]p. JPRS: 15288.
Order from OTS or SLA $1.10 62-33046

Trans. of #Fiziologiya Rastenii (USSR) 1962, v. 9, no. 2, p. 129-132.

DESCRIPTORS: *Plants, Physiology, *Agriculture, Production.

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 35. 11 Sep 62 [28]p. JPRS: 15219.
Order from OTS or SLA $2.60 62-32890

Trans. of Traktory i Sel'Khozmashiny (USSR) 1962 [v. 32] no. 3, p. 1-3, 7, 10, 34-36; Ekonomicheskaya Gazeta (USSR) 1962, no. 13[34], p. 2; no. 17[38] p. 20; and from Stroitel'naya Gazeta (USSR) 1962, 9 Mar.

DESCRIPTORS: *Industrial research, *Tractors, *Agricultural machinery, Scientific research, Industrial plants, Agriculture, Economics, Beets, Corn, Machines.

Contents:
Scientific-research and experimental operations in the development of new tractors, by S. I. Akopyan
Reconstruction of tractor and agricultural machinery plants
The industrial problem cannot be postponed
Information on the Khar'kov tractor assembly plant, by N. Gubenkov
Universal T-40 wheel tractor, by Vu. F. Malyshev
The 2SPS-6 sugar beet planter with an attachment for thinning sprouts, by B. F. Kuznetsov
Mower for work at increased speeds, by I. A. Matrosova
Improved corn-harvesting machinery needed, by V. Dmitrenko and K. Klement'ev.

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 36. 17 Sep 62 [44]p. JPRS: 15307.
Order from OTS or SLA $4.60 62-33018

Trans. of Vestnik Mashinostroeniya (USSR) 1962 [v. 42] no. 5, p. 3-8; Ekonomicheskaya Gazeta (USSR) 1962, no. 19[40] p. 25; partial trans. of Traktory i Sel'Khozmashiny (USSR) 1962 [v. 32] no. 6, p. 22-28, 33-34; Ekonomika Sel'skogo Khozyaistva (USSR) 1962 [v. 33] no. 5, p. 70-73; also selected articles from Mar and May-June 62 issues of 3 Russian newspapers.

DESCRIPTORS: *Industrial research, *Tractors, *Agricultural machinery, Agriculture, Machines, Construction, *Diesel engines, Industrial production, *Potatoes, *Trailers, Cargo vehicles, *Scheduling, Economics, Industrial equipment, *Hydraulic systems.

Contents:
Development of agriculture and tasks of machine building, by V. I. Lozovoi
Beginning of a great biography (Minsk engine plant) by N. Mikheev
Types of potato harvesting machines, by G. D. Petrov and N. V. Firsov
Types of tractor disc harrows, by N. A. Ogorodnikov
Tractor trailers, by B. P. Chernikov
Specialization of Baltic agricultural machine building, by I. Dizhbit and I. Reidi
Future machinery for collective and state farms, by G. Grigorenko
So this is who is undermining reconstruction of our plant
Better agricultural machinery is needed, by R. Kugel' and S. Dmitrichenko
We have agreements but no spare parts, by I. Romakin.

Anilovich, V. Ya.
COEFICIENTES DE TOLERANCIA EN EL EMBRAGUE DEL TRACTOR (O Koeffitsiente Zapasa Mufty Stsepleniya Traktora) (Tolerance Coefficients in the Tractor Clutch). 19p. 4 refs. CID: 62-12. (text in Spanish).
Order from OTS or ETC $1.35 62-26212

Trans. of Traktory i Sel'khozmashiny (USSR) 1960, [v. 30] no. 8, p. 15-18.

DESCRIPTORS: *Clutches, Tractors.

Barskii, I. B. and Ivanov, V. V.
ELEVACION DE LAS CUALIDADES TRACTORAS DE LOS TRACTORES DE RUEDAS (Povyshenie Tyagovykh Kachestv Kolesnykh Traktorov) (Enhancement of Driving Properties of Wheel Tractors). 28p. 10 refs. CID: 62-31. (text in Spanish).
Order from OTS or ETC $1.75 62-26231

Trans. of Traktory i Sel'khozmashiny (USSR) 1960, [v. 30] no. 8, p. 3-7.

DESCRIPTORS: *Tractors, Operation.

Belichkin, I. N. and Zubietova, M. P.
PRUEBAS ACELERADAS DE DESGASTE ABRASIVO EN MOTORES DE TRACTORES (Uskorennye Ispytaniya Traktornykh Dvigatelei na Abrazivnoe Iznashivanie) (Accelerated Tests on Abrasive Wear of Tractor Engines). 17p. 5 refs. CID: 62-85. (text in Spanish).
Order from OTS or ETC $1.30 62-26285

Trans. of Traktory i Sel'khozmashiny (USSR) 1960, [v. 30] no. 9, p. 9-11.

DESCRIPTORS: Tests, Abrasion, *Tractor engines.

Bochkarek, B. I. and Baranchuk, V. P.
NEUE TECHNOLOGIE ZUM BEREITEN DES HEUMEHLS. (New Technology for Preparing Hay-powder). 6p. (text in German).
Order from T. I. B. $1.55

Trans. of Trudy [Vserossiiskii Nauchno-Issledovatel'skii Institut Mekhan. i Elektrifik. Sel'skogo Khozyaistva]. Trudy (USSR) 1960, p. 74.

DESCRIPTORS: *Agriculture, *Machines.

Gil'shtein, P. M. and Starodinskii, D. Z.
CULTIVADOR ARTICULADO A TRACTOR PARA TERRENOS PEDREGOSOS (Navesnoi Kul'tivatorrykhlitel' dlya Kamenistykh Pochv) (Articulated Tractor Cultivator for Stony Soils). 6p. (foreign text included). CID: 62-90. (text in Spanish).
Order from OTS or ETC $0.85 62-26290

Trans. of Traktory i Sel'khozmashiny (USSR) 1960 [v. 30] no. 8, p. 37.

DESCRIPTORS: *Tractors, Soils, Rock, Agriculture.

Liepa, I. Zh.
APPLICATION OF THE AEROSOL METHOD FOR THE CONTROL OF STORAGE PESTS IN THE LATVIAN SSR (Primenenie Aerozol'nogo Metoda Bor'by s Ambarnymi Vreditelyami v Latviiskoi SSR). [Nov 61] 9p. 5 refs. PL-480 Agr.
Order from OTS $0.50 60-21101

Trans. of mono. Konferentsiya po Voprosam Zashchity Rastenii (no. 1) 1956. Sbornik Trudov po Zashchite Rastenii, p. 153-160.

DESCRIPTORS: Insects, *Pest control, *Insecticides, Chlordan, DDT, Benzenes, Hexachlorocyclohexanes, *Aerosols, Aerosol generators, *Cereals, Storage.

Lobov, M. F.
THE PROBLEMS INVOLVED IN METHODS OF DETERMINING THE WATER REQUIREMENTS OF PLANTS UNDER IRRIGATION (K Voprosu o Sposobakh Opredeleniya Potrebnosti Rastenii v Vode pri Polivakh). [1962] [7]p. 6 refs.
Order from OTS or SLA $1.10 62-10745

Trans. of Akademiya Nauk SSSR. Doklady, 1949, v. 66, no. 2, p. 277-280.

DESCRIPTORS: *Water supplies, *Irrigation systems, *Plants, Physiology.

Ogryzkov, E.
DAS PFLÜGEN VON BRACHFELDERN BEI ERHÖHTEN GESCHWINDIGKEITEN (Plowing of Fallow Fields at Increased Speed). 2p. (text in German).
Order from T. I. B. $1.40

Trans. of Tekhnika v Sel'skom Khozyaistve (USSR) 1961 [v. 21] no. 11, p. 28-29.

DESCRIPTORS: *Agriculture, Machines.

Plant Cultivation

Babushkin, L. M.
FERTILIZACION CON ANHIDRO CARBONICO (Udobrenie Uglekislotoi) (Carbon Dioxide Fertilisation). 5p. CID: 62-25. (text in Spanish).
Order from OTS or ETC $0.80 62-26225

Trans. of Priroda (USSR) 1953 [v. 42] no. 12, p. 127.

DESCRIPTORS: *Fertilizers, *Carbon dioxide.

Bobchenko, V. I.
SOBRE LA TECNICA DEL RIEGO SUBTERRANEO POR TOPERAS (O Tekhnike Podpochvennogo Krotovogo Orosheniya) (On the Technique of Subterranean Irrigation with Mole-holes). 40p. CID: 62-45. (text in Spanish).
Order from OTS or ETC $2.25 62-26245

Trans. of Gidrotekhnika i Melioratsiya (USSR) 1954 [v. 6] no. 12, p. 19ff.

DESCRIPTORS: *Irrigation systems.

Chesalin, G. and Ladonin, F.
THE EFFECTIVENESS OF HERBICIDE APPLICATION. 29 Mar 62 [10]p. JPRS: 13234.
Order from OTS or SLA $1.10 62-23762

Trans. of Voprosy Ekonomiki (USSR) 1961, no. 11, p. 86-90.

DESCRIPTORS: Plants, *Herbicides, Phenoxy radicals, Acetic acids, Sprays.

Ciric, M.
THE CHARACTERISTICS OF THE PROCESS OF PODZOLIZATION OF SOILS IN SERBIA [AND] THE PROBLEM OF CLASSIFICATION OF PODZOLIC SOILS (Karakteristike Process Opodzoljavanja Zemljista u Srbiji [and] Problem Klasifikacije Podzolastih Zemljista) tr. by Danica Arandelovic and Muriel Heppell. [1962] [85]p. 126 refs. PL-480 Agr.
Order from OTS $0.75 60-21616

Trans. of Jugoslovensko Drustvo za Proucavanje Zemljista. [Izdanje] 1956, no. 4, 73p. and Narodni Sumar (Yugoslavia) 1955, v. 12, no. 1/3, p. 48-58.

DESCRIPTORS: Soils, Classification, Climate, Geology, Plants, Chemical properties, Yugoslavia.

Komatsu, N.
EFFECT OF THE VARIED AMOUNT OF PHOSPHATE FERTILIZER ON THE MATURITY OF BRIGHT LEAF TOBACCO, PT. I. [1962] 14p.
Order from K-H $17.50 K-H 3263-a

Trans. of [Nihon Dojo Hiryogaku Zasshi] (Japan) 1954, v. 24, p. 268-270.

DESCRIPTORS: *Fertilizers, *Phosphates, Growth, Tobacco.

Komatsu, N.
EFFECT OF THE VARIED AMOUNT OF PHOSPHATE FERTILIZER ON THE MATURITY OF BRIGHT LEAF TOBACCO, PT. II. [1962] 10p.
Order from K-H $12.50 K-H 3180-c

Trans. of [Nihon Dojo Hiryogaku Zasshi] (Japan) 1954, v. 24, p. 331-333.

DESCRIPTORS: *Fertilizers, Phosphates, Growth, *Tobacco.

Pastyrik, Ludovit and Priehradny, Stanislav.
THE METABOLISM OF TOBACCO LEAVES IN DEPENDENCE TO SOME MICROELEMENTS: [THE PHYSIOLOGY OF PLANTS] (Metabolizmus Listov Tabak v Zazislosti od Niektorych Mikroelementov)]. [1962] 58p.
Order from K-H $72.50 K-H 6456-b

Trans. of [Biologicke Prace] (Czechoslovakia) 1956 [v. 2, no. 11].
Another trans. is available from SLA $5.60 as 61-16440 [1961] [58]p.

DESCRIPTORS: *Tobacco, Metabolism, *Plants, Physiology.

Semenenko, V. E. and Boadimirova, M. G.
ALL-UNION CONFERENCE ON THE CULTIVATION OF UNICELLULAR ALGAE. 2 Apr 62 [8]p. JPRS: 13273.
Order from OTS or SLA $1.10 62-23774

Trans. of #Fiziologiya Rastenii (USSR) 1961, v. 8, no. 4, p. 518-520.

DESCRIPTORS: *Conferences, Plants, *Algae, Culture.

Takahashi, T. and Yoshida, T.
RECIPROCAL ACTION OF AMMONIA-NITROGEN, NITRATE-NITROGEN, Cl AND SO_4. Pt. 6 of Reciprocal Action of Ions Related to Nutrition of Tobacco. [1962] 12p.
Order from K-H $15.00 K-H 11128-b

Trans. of Nihon Dojo Hiryogaku Zasshi (Japan) 1957, v. 28, p. 181-184.

DESCRIPTORS: *Tobacco, Nutrition, *Ammonia, *Nitrogen, Nitrates, *Sulfates, *Chlorine.

Volobuev, V. P.
THE NEW HERBICIDE "ETHERANE-66". 10 Apr 62, 5p. 5 refs. JPRS: 13472.
Order from OTS $0.50 62-11647

Trans. of Akademiya Nauk Azerbaidzhanskoi SSR, Baku. Doklady, 1961, v. 17, no. 4, p. 331-334.

DESCRIPTORS: Plants, *Herbicides, Chlorides, Ethers, Synthesis, Toxicity

ASTRONOMY

Gorynya, Anton Ageevich and Drofa, Vasilii Kirillovich.
RELIEF OF THE LIMB ZONE OF THE MOON: PREFACE [AND LEGENDS FOR TABLES]. 18 Sep 62 [16]p. JPRS: 15324.
Order from OTS or SLA $1.60 62-33116

Partial trans. of mono. Rel'ef Kraevoi Zony Luny, Kiev, 1962, 164p.

DESCRIPTORS: *Moon, Terrain, Albedo (Astronomy), Spectrographic analysis.

Astrophysics

CELESTIAL MECHANICS AND OPTIMUM METHODS. PT. 2: MOTION OF BODIES OF VARIABLE MASS (SURVEY OF SOVIET LITERATURE FOR 1956-1960). Background rept. 31 Aug 61 [20]p. 19 refs. AID rept. 61-128.
Order from OTS or SLA $1.60 61-28477

A survey of Soviet literature consisting of 19 reviews based on source materials for period 1956-60.

DESCRIPTORS: *Planets, Motion, Bibliography, Rockets, Exploration, Mathematical analysis, Solar systems, *Orbital flight paths, Mass transfer.

PHYSICAL PROPERTIES OF PLANETARY ATMOSPHERES: REVIEW OF SOVIET LITERATURE. FROM 1951 ON. Chap. 1 of Soviet Research on the Atmospheres [and surfaces] of Venus, Mars, and the Moon. 30 June 62 [72]p. 23 refs. AID rept. 62-87.
Order from OTS or SLA $7.60 62-32233

DESCRIPTORS: *Planetary atmospheres, Physical properties, Bibliography, Space probes, *Surfaces, *Venus, *Mars, *Moon, Chemical analysis, Energy, Sources, Dynamics, Optical properties, Exosphere.

Contents:
Composition of planetary atmospheres
Energy sources of the atmosphere
Dynamics of the atmosphere
Optical properties of the atmosphere
Dissipation of the atmosphere.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 34. 26 Apr 62, 51p. JPRS: 13557.
Order from OTS $16.00/year 61-11147-34
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanography, Meteorology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 35. 15 May 62. 41p. JPRS: 13730.
Order from OTS $16.00/year 61-11147-35
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanography, Meteorology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 36- 31 May 62, 31p. JPRS: 13931.
Order from OTS $16.00/year 61-11147-36
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanography, Meteorology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 37. 14 June 62, 30p. JPRS: 14106.
Order from OTS $16.00/year 61-11147-37
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanography, Meteorology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 38. 2 July 62, 30p. JPRS: 14353.
Order from OTS $16.00/year 61-11147-38
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanography, Meteorology

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 39. 12 July 62, 32p. JPRS: 14453.
Order from OTS $16.00/year 61-11147-39
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanography, Meteorology

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 40. 31 July 62, 21p. JPRS: 14660.
Order from OTS $16.00/year 61-11147-40
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanography, Meteorology

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

Chernikova, V.
STARS ON THE WIRE. 27 Mar 62 [11]p. JPRS: 13160.
Order from OTS or SLA $1.60 62-23592

Trans. from Nedelya (USSR) 1961, no. 52, p. 18.

DESCRIPTORS: *Stars, *Radio astronomy, Astronomy, Galaxies, Moon.

Hedervari, Peter.
THE ENERGY NECESSARY FOR THE CREATION OF LUNAR CRATERS AND RING MOUNTAINS. 12 Feb 62 [23]p. JPRS: 12458.
Order from OTS or SLA $2.60 62-19157

Partial trans. (some parts summarized) of Magyar Fizikai Folyoirat (Hungary) 1961, v. 9, no. 4, p. 251-263.

DESCRIPTORS: *Moon, *Craters, *Mountains, Astronomy, Volcanoes, Volcano Islands, Energy.

Every indication seems to point to the fact that the majority of lunar craters (with a diameter of equal to or less than 20 kilometers) and the ring mountains (with diameters in excess of 20 kilometers) were created by internal lunar forces. This paper shows that the available energy of lunar dilatation is far greater than that necessary for the creation of these formations. By applying the formula of thermal energy developed for volcanic islands it is concluded that, depending on the diameter, the necessary thermal energy is 10^{25} to 10^{30} ergs. It is also shown that the energy requirements of the largest ring mountains are in the order of that consumed in the creation of the Mauna Loa volcano in Hawaii. This energy is about 5.6×10^{5}-times as much as that of the strongest shock wave of the 1960 earthquake in Chile. (Author)

Neiman, V. B.
ON THE NATURE OF THE BASIC LUNAR FORMATIONS. 6 Sep 62, 3p. 1 ref. AID Rept. 62-123.
Order from OTS or SLA $1.10 62-33228

Abstract trans. of Vsesoyuznoe Astronomo-Geodezicheskoe Obshchestvo. Byulleten' (USSR) 1962, no. 30(37) p. 28-32.

DESCRIPTORS: *Moon, *Maps, Astrophysics, Surface properties, Height finding.

Niilisk, Khel'gi.
A NEW RADIATION NOMOGRAM. 18 May 62 [29]p. 39 refs. JPRS: 13793.
Order from OTS or SLA $2.60 62-24704

Trans. of Akademiya Nauk Estonskoi SSR, Tallinn. Izvestiya. Seriya Tekhnicheskikh i Fiziko-Matematicheskikh Nauk, 1961, v. 10, no. 4, p. 329-339.

DESCRIPTORS: *Infrared radiation, Infrared spectroscopy, *Nomographs, Atmospherics, Solar radiation.

Peregudov, F. I.
THE EFFECTIVE SCATTERING SURFACE OF A WEAKENED METEOR TRAIL. [1962] [7]p. 7 refs. [USASIA] Trans. Log no. 1027.
Order from OTS or SLA $1.10 62-32903

Trans. of #Astronomicheskii Zhurnal (USSR) 1957, v. 34, no. 4, p. 621-624.

DESCRIPTORS: *Meteors, *Radio waves, Scattering, Penetration, Radar targets, Radar stations.

The main characteristic of a radar target is its radar cross-section. A similar characteristic may be applied to a meteor trail. Most of the meteor trails

are weakened trails, which the falling radio wave penetrates without distortion. The radar cross-section S_0 of a weakened trail can be calculated by the well-known Lovell-Klegg formula. However the latter does not explain the sharp decrease of S_0 of the meter trail with decreasing wavelength. A new formula suitable for a wider frequency band has been derived by taking into account the phase differences inside the trail on the basis of Herlofson's work. (Author)

Severnyi, A. V.
INVESTIGATION OF DEUTERIUM IN THE SUN (Issledovanie Deiteriya na Solntse). Feb 62 [35]p. 17 refs. NASA TT F-8169.
Order from OTS or SLA $3.60 62-33205

Trans. of [Akademiya Nauk SSSR]. Krymskaya Astrofizicheskaya Observatoriya. Izvestiya, 1956, v. 16, p. 12-44.

DESCRIPTORS: *Solar atmosphere, Solar energy, Nuclear reactions, Solar spectrum, *Deuterium, *Lithium, Photocells, Astronomical data.

This study indicates that if deuterium and lithium are present in the solar atmosphere neither the concept of complete mixing nor that of partial mixing (Greenstein) can be maintained. If we do not consider the little-founded possibility that there was a serious initial difference in the chemical compositions of the sun and earth, the difference between the relative concentrations of deuterium and lithium on the sun and on the earth cannot be ascribed to the effect of thermonuclear reactions. Moreover, the existence of rather intense convection and of such heavy elements as thorium and gold at the sun's surface is evidence of even complete mixing. If, nevertheless, the hypothesis of thermonuclear reactions as the chief source of solar energy is maintained, we must conclude that nuclear processes (possibly nuclear disintegration, fission, or nuclear explosions) in which elements such as lithium and deuterium are formed occur in the outermost layers of the sun.

Shemyakin, M. M.
ON SOME PATTERNS IN THE DISTRIBUTION OF CRATER CHAINS IN THE REGIONS OF CLAVIUS AND HIPPARCHUS CIRQUES. 4 Sep 62, 2p. AID rept. 62-121.
Order from OTS or SLA $1.10 62-33227

Abstract trans. of Vsesoyuznoe Astronomo-Geodezicheskoe Obshchestvo. Byulleten' (USSR) 1962, no. 30(37) p. 33-38.

DESCRIPTORS: *Moon, Surface properties, Astrophysics

Shteptan, V. E.
IONIZED METEOR TRAIN. 20 Apr 62 [5]p. FTD-TT-62-165.
Order from OTS or SLA $1.10 62-25821

Unedited rough draft trans. of Astronomicheskii Tsirkulyar (USSR) 1960, no. 208, p. 25-26. Abstract trans. is available from LC or SLA mi$2.70, ph$4.80 in 61-15182, AID-60-96, 30 Nov 60 [2]p.

DESCRIPTORS: *Meteors, Ionization, Colors, Brightness, Intensity.

Certain regularities are tabulated that were deduced from the rather extensive information of observing telescopic meteors obtained by means of binocular from August 1952 through September 1959 at the city of Chardzhou.

Tai Wen-sai.
PROBLEMS OF THE EVOLUTION OF HEAVENLY BODIES. 26 May 61 [10]p. JPRS: 4647.
Order from OTS or SLA $1.10 62-24780

Trans. from Jen Min Jih Pao (Chinese People's Republic) 1961, 21 Feb, p. 7.

DESCRIPTORS: *Astrophysics, Solar systems, Galaxies, Stars, Planets, Theory.

Vitkevich, V. V. and Panovkin, B. N.
ON THE STRUCTURE OF THE NONUNIFORMITIES OF THE SOLAR SUPER-CORNA. [1962] [4]p. 1 ref. USASIA Trans. Log no. 1150.
Order from OTS or SLA $1.10 62-32629

Trans. of #Astronomicheskii Zhurnal (USSR) 1959, v. 36, no. 3 [p. 544-546].

DESCRIPTORS: *Solar corona, Radio astronomy, Nebulae, Stellar eclipses.

On the basis of data of the observations of the occultation of the Crab nebula by the solar corona made in July, 1957, it is shown that the nonuniformities of the supercorona, evidently, have the form of elongated streams, the directions of which are mainly radial, or close to radial. Such an orientation of the nonuniformities does not contradict the general idea that the nonuniformities of the supercorona are oriented along the force lines of the general solar magnetic field, considered to be a dipole. (Author)

Vitkevich, V. V., Kuz'min, A. D. and others.
RADIOASTRONOMIC OBSERVATIONS OF SOVIET COSMIC ROCKETS. 27 Feb 62 [16]p. 12 refs. Trans. Log no. 1290-FS.
Order from OTS or SLA $1.60 62-19273

Trans. of #Radiotekhnika i Elektronika (USSR) 1961, v. 6, no. 9, p. 1420-1431.

DESCRIPTORS: Radio astronomy, Radio signals, *Spaceships, *Rockets, Tracking, Instrumentation, Radio interferometers, *Radio interference.

The article describes a radiointerferential method for observing radio signals of the first three Soviet cosmic rockets. The basic relationships of radiointerferential methods of observation is shown. Herein described are the equipment and methodology for adjusting the radiointerferometer through discrete radioradiation source. The paper determines the time and coordinates involved in the landing on the moon of the scientific equipment contained of the Second Soviet cosmic rocket. (Author)

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 38. 2 July 62, 30p. JPRS: 14353.
Order from OTS $16.00/year 61-11147-38
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanography, Meteorology

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 39. 12 July 62, 32p. JPRS: 14453.
Order from OTS $16.00/year 61-11147-39
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanography, Meteorology

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 40. 31 July 62, 21p. JPRS: 14660.
Order from OTS $16.00/year 61-11147-40
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanography, Meteorology

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

Chernikova, V.
STARS ON THE WIRE. 27 Mar 62 [11]p. JPRS: 13160.
Order from OTS or SLA $1.60 62-23592

Trans. from Nedelya (USSR) 1961, no. 52, p. 18.

DESCRIPTORS: *Stars, *Radio astronomy, Astronomy, Galaxies, Moon.

Hedervari, Peter.
THE ENERGY NECESSARY FOR THE CREATION OF LUNAR CRATERS AND RING MOUNTAINS. 12 Feb 62 [23]p. JPRS: 12458.
Order from OTS or SLA $2.60 62-19157

Partial trans. (some parts summarized) of Magyar Fizikai Folyoirat (Hungary) 1961, v. 9, no. 4, p. 251-263.

DESCRIPTORS: *Moon, *Craters, *Mountains, Astronomy, Volcanoes, Volcano Islands, Energy.

Every indication seems to point to the fact that the majority of lunar craters (with a diameter of equal to or less than 20 kilometers) and the ring mountains (with diameters in excess of 20 kilometers) were created by internal lunar forces. This paper shows that the available energy of lunar dilatation is far greater than that necessary for the creation of these formations. By applying the formula of thermal energy developed for volcanic islands it is concluded that, depending on the diameter, the necessary thermal energy is 10^{25} to 10^{30} ergs. It is also shown that the energy requirements of the largest ring mountains are in the order of that consumed in the creation of the Mauna Loa volcano in Hawaii. This energy is about 5.6×10^{5}-times as much as that of the strongest shock wave of the 1960 earthquake in Chile. (Author)

Neiman, V. B.
ON THE NATURE OF THE BASIC LUNAR FORMATIONS. 6 Sep 62, 3p. 1 ref. AID Rept. 62-123.
Order from OTS or SLA $1.10 62-33228

Abstract trans. of Vsesoyuznoe Astronomo-Geodezicheskoe Obshchestvo. Byulleten' (USSR) 1962, no. 30(37) p. 28-32.

DESCRIPTORS: *Moon, *Maps, Astrophysics, Surface properties, Height finding.

Niilisk, Khel'gi.
A NEW RADIATION NOMOGRAM. 18 May 62 [29]p. 39 refs. JPRS: 13793.
Order from OTS or SLA $2.60 62-24704

Trans. of Akademiya Nauk Estonskoi SSR, Tallinn. Izvestiya. Seriya Tekhnicheskikh i Fiziko-Matematicheskikh Nauk, 1961, v. 10, no. 4, p. 329-339.

DESCRIPTORS: *Infrared radiation, Infrared spectroscopy, *Nomographs, Atmospherics, Solar radiation.

Peregudov, F. I.
THE EFFECTIVE SCATTERING SURFACE OF A WEAKENED METEOR TRAIL. [1962] [7]p. 7 refs. [USASIA] Trans. Log no. 1027.
Order from OTS or SLA $1.10 62-32903

Trans. of #Astronomicheskii Zhurnal (USSR) 1957, v. 34, no. 4, p. 621-624.

DESCRIPTORS: *Meteors, *Radio waves, Scattering, Penetration, Radar targets, Radar stations.

The main characteristic of a radar target is its radar cross-section. A similar characteristic may be applied to a meteor trail. Most of the meteor trails

are weakened trails, which the falling radio wave penetrates without distortion. The radar cross-section S_0 of a weakened trail can be calculated by the well-known Lovell-Klegg formula. However the latter does not explain the sharp decrease of S_0 of the meter trail with decreasing wavelength. A new formula suitable for a wider frequency band has been derived by taking into account the phase differences inside the trail on the basis of Herlofson's work. (Author)

Severnyi, A. V.
INVESTIGATION OF DEUTERIUM IN THE SUN (Issledovanie Deiteriya na Solntse). Feb 62 [35]p. 17 refs. NASA TT F-8169.
Order from OTS or SLA $3.60 62-33205

Trans. of [Akademiya Nauk SSSR]. Krymskaya Astrofizicheskaya Observatoriya. Izvestiya, 1956, v. 16, p. 12-44.

DESCRIPTORS: *Solar atmosphere, Solar energy, Nuclear reactions, Solar spectrum, *Deuterium, *Lithium, Photocells, Astronomical data.

This study indicates that if deuterium and lithium are present in the solar atmosphere neither the concept of complete mixing nor that of partial mixing (Greenstein) can be maintained. If we do not consider the little-founded possibility that there was a serious initial difference in the chemical compositions of the sun and earth, the difference between the relative concentrations of deuterium and lithium on the sun and on the earth cannot be ascribed to the effect of thermonuclear reactions. Moreover, the existence of rather intense convection and of such heavy elements as thorium and gold at the sun's surface is evidence of even complete mixing. If, nevertheless, the hypothesis of thermonuclear reactions as the chief source of solar energy is maintained, we must conclude that nuclear processes (possibly nuclear disintegration, fission, or nuclear explosions) in which elements such as lithium and deuterium are formed occur in the outermost layers of the sun.

Shemyakin, M. M.
ON SOME PATTERNS IN THE DISTRIBUTION OF CRATER CHAINS IN THE REGIONS OF CLAVIUS AND HIPPARCHUS CIRQUES. 4 Sep 62, 2p. AID rept. 62-121.
Order from OTS or SLA $1.10 62-33227

Abstract trans. of Vsesoyuznoe Astronomo-Geodezicheskoe Obshchestvo. Byulleten' (USSR) 1962, no. 30(37) p. 33-38.

DESCRIPTORS: *Moon, Surface properties, Astrophysics

Shteptan, V. E.
IONIZED METEOR TRAIL. 20 Apr 62 [5]p. FTD-TT-62-165.
Order from OTS or SLA $1.10 62-25821

Unedited rough draft trans. of Astronomicheskii Tsirkulyar (USSR) 1960, no. 208, p. 25-26. Abstract trans. is available from LC or SLA mi$2.70, ph$4.80 in 61-15182, AID-60-96, 30 Nov 60 [21]p.

DESCRIPTORS: *Meteors, Ionization, Colors, Brightness, Intensity.

Certain regularities are tabulated that were deduced from the rather extensive information of observing telescopic meteors obtained by means of binocular from August 1952 through September 1959 at the city of Chardzhou.

Tai Wen-sai.
PROBLEMS OF THE EVOLUTION OF HEAVENLY BODIES. 26 May 61 [10]p. JPRS: 4647.
Order from OTS or SLA $1.10 62-24780

Trans. from Jen Min Jih Pao (Chinese People's Republic) 1961, 21 Feb, p. 7.

DESCRIPTORS: *Astrophysics, Solar systems, Galaxies, Stars, Planets, Theory.

Vitkevich, V. V. and Panovkin, B. N.
ON THE STRUCTURE OF THE NONUNIFORMITIES OF THE SOLAR SUPER-CORNA. [1962] [4]p. 1 ref. USASIA Trans. Log no. 1150.
Order from OTS or SLA $1.10 62-32629

Trans. of #Astronomicheskii Zhurnal (USSR) 1959, v. 36, no. 3 [p. 544-546].

DESCRIPTORS: *Solar corona, Radio astronomy, Nebulae, Stellar eclipses.

On the basis of data of the observations of the occultation of the Crab nebula by the solar corona made in July, 1957, it is shown that the nonuniformities of the supercorona, evidently, have the form of elongated streams, the directions of which are mainly radial, or close to radial. Such an orientation of the nonuniformities does not contradict the general idea that the nonuniformities of the supercorona are oriented along the force lines of the general solar magnetic field, considered to be a dipole. (Author)

Vitkevich, V. V., Kuz'min, A. D. and others.
RADIOASTRONOMIC OBSERVATIONS OF SOVIET COSMIC ROCKETS. 27 Feb 62 [16]p. 12 refs. Trans. Log no. 1290-FS.
Order from OTS or SLA $1.60 62-19273

Trans. of #Radiotekhnika i Elektronika (USSR) 1961, v. 6, no. 9, p. 1420-1431.

DESCRIPTORS: Radio astronomy, Radio signals, *Spaceships, *Rockets, Tracking, Instrumentation, Radio interferometers, *Radio interference.

The article describes a radiointerferential method for observing radio signals of the first three Soviet cosmic rockets. The basic relationships of radiointerferential methods of observation is shown. Herein described are the equipment and methodology for adjusting the radiointerferometer through discrete radioradiation source. The paper determines the time and coordinates involved in the landing on the moon of the scientific equipment contained of the Second Soviet cosmic rocket. (Author)

Yakovkin, A. A.
THE POSITION ANGLE METHOD FOR DETERMINATION OF LUNAR PHYSICAL LIBERATION PARAMETERS. [1962] [11]p. 5 refs. AERDL T-1624.
Order from OTS or SLA $1.60 62-33212

Trans. of Akademiya Nauk USSR, Kiev. Holovna Astronomichna Observatoriya. Izvestiya, 1961, v. 4, no. 1, p. 3-11.

DESCRIPTORS: *Moon, Photography, Mapping, Optics, Astronomical data, Surface properties.

A new method is offered for determination of the position of Mösting A relative to the lunar center of mass which will not depend on the figure of the lunar limb zone. Measurement of the position angles of the limb craters relative to Mösting A makes it possible to determine the physical libration parameters. If the central crater is situated in the optical center, all image distortions (coma, distortion, etc.) are oriented along the radii and therefore do not influence the position angles. Formulas for processing observations by the position-angle method.

BEHAVIORAL SCIENCES

Byalik, B. and Sobolev, S. L.
AN ARGUMENT ABOUT CYBERNETICS. 30 July 62 [14]p. JPRS: 14643.
Order from OTS or SLA $1.60 62-32078

Trans. from Literaturnaya Gazeta (USSR) 1962, 29 May and 2 June.

DESCRIPTORS: *Cybernetics, Human engineering, *Philosophy.

The philosopher B. Byalik, asks, "Comrades, are you serious?" with respect to contentions that it has been theoretically proven that it is possible to artificially and mechanically create living creatures; thinking, creative, capable of experiencing joy and sadness, and to reproduce themselves, which may eventually outstrip man and even enslave him. S. L. Sobolev replies, "Yes, we are quite serious." Sobolev suggests that Byalik's doubts are equivalent to a belief in God.

Pribram, K.
TOWARD A THEORY OF PHYSIOLOGICAL PSYCHOLOGY (INCLUDING COMMENT BY P. H. ANOKHIN) (K Teorii Fiziologicheskoi Psikologii). 3 Apr 62 [43]p. 157 refs. JPRS: 13302.
Order from OTS or SLA $4.60 62-23803

Trans. of #Voprosy Psikhologii (USSR) 1961, v. 7, no. 2, p. 133-159.

DESCRIPTORS: *Nervous system, Anatomy, *Physiology, *Psychology, Applied psychology, Reasoning, Response, Automation, Computers, Behavior, *Anatomical models, Cybernetics, Information theory.

Human Engineering

ACTIVITIES OF PROMINENT CHINESE COMMUNIST PERSONALITIES NO. 31. 12 July 62 [9]p. JPRS: 14451.
Order from OTS or SLA $1.10 62-25995

Contains information on the activities of the highest echelons of Chinese Communist government leaders and on other prominent personalities. The Chinese telecode number is given along with each name.

DESCRIPTORS: *Communist, *China, Leadership, Sociology.

BIOGRAPHIES OF SOVIET SCIENTISTS. 7 Sep 62 [47]p. JPRS: 15171.
Order from OTS or SLA $4.60 62-32863

Trans. of 15 selected biographical articles from various Soviet sources.

DESCRIPTORS: *Scientific personnel, Personnel, History.

Contents:
F. P. Belyankin, V. Ya. Braitsev, I. M. Gol'dberg, I. S. Kainarskii, M. N. Khanin, I. S. Kolesnikov, V. N. Kondrat'ev, G. V. Kurdyumov, A. A. Lebedev, I. T. Mil'chenko, A. A. Shmidt, V. I. Spitsyn, L. N. Sretenskii, M. I. Vinogradov, V. K. Zhgenti.

FROM THE COMMITTEE FOR LENIN PRIZES IN THE AREA OF SCIENCE AND MECHANICS OF THE SOVIET OF MINISTERS OF THE USSR. 26 Mar 62 [13]p. 31 refs. JPRS: 13230.
Order from OTS or SLA $1.60 62-23761

Trans. from Izvestiya (USSR) 1962, 16 Feb, p. 3.

DESCRIPTORS: *Scientific personnel, Science, Engineering.

INFORMATION ON ACADEMIC RANKS AND DEGREES. 3 Aug 62 [13]p. JPRS: 14730.
Order from OTS or SLA $1.60 62-32205

Trans. of Chemicke Listy (Czechoslovakia) 1962, v. 56, no. 4, p. 476; no. 5, p. 619 and from Otechestven Front (Bulgaria) 1962, v. 19, no. 5527, p. 2.

DESCRIPTORS: *Scientific personnel, Personnel, *Agriculture, *Chemists, Theses, Czechoslovakia, Bulgaria, Education.

Contents:
Candidacy dissertations in chemistry in Czechoslovakia
Bulgarian Academy of Agricultural Sciences Announcement no. 256, 4 May 62.

REGULATIONS ON THE TRAINING OF ENGINEERS IN HUNGARY. 29 June 61 [12]p. JPRS: 8524.
Order from OTS or SLA $1.60 62-19375

Trans. of Vizugyi Ertesito (Hungary) 1961, v. 3, no. 2/3, p. 9-13.

DESCRIPTORS: *Engineering personnel, Personnel, Training, Education, *Hungary

Contents:
On the post graduate training of engineers and on the Institute of Post Graduate Engineering.
University training of specialist engineers in Hungary

Vinogradov, V. A.
SCIENTIFIC CONTACTS BETWEEN SOVIET AND AMERICAN SCIENTISTS, tr. by B. W. Kuvshinoff. 15 Aug 62, 4p. APL/JHU TG 230-T322.
Order from OTS $0.50 62-11775

Trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 6, p. 83-86.

DESCRIPTORS: *Scientific personnel, Scientific organizations.

BIOLOGICAL SCIENCES

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 21 (BIOLOGY SERIES). 17 Sep 62 [23]p. JPRS: 15300.
Order from OTS or SLA $2.60 62-33043

Trans. of selected abstracts from Referativnyi Zhurnal. Biologiya (USSR) 1961, no. 9.

DESCRIPTORS: *Bibliography, *Abstracts, *Agriculture, *Animals, *Microbiology, *Parasitology, *Pathology, *Pharmacology, *Physiology, *Plants, *Soils.

MEDICAL AND BIOLOGICAL RESEARCH AND DEVELOPMENT IN ISRAEL. 25 May 62 [27]p. JPRS: 13871.
Order from OTS or SLA $2.60 62-24986

Trans. from Haboker (Israel) 1962, 20 Feb and 28 Mar; Ma'ariv (Israel) 1962, 26 Jan; Omer (Israel) 1962, 21 Mar; Davar (Israel) 1962, 18 Apr; Letzte Nyes (Israel) 1962, 8 Apr.

DESCRIPTORS: *Cancer, *Medical research, *Viruses, Therapy, *Plants, *Pest control, *Insects, Scientific organizations, *Citrus fruits, Microbiology, *Heart, Diseases, *Israel

Contents:
Discovery of the cancer-causing virus
Cure for cancer sought in plants
Biological extermination of plant pests
Biological institute in Hefer Valley
School of microbiology at the [Hebrew] University
Cardiac diseases

REPORT ON SOVIET MEDICAL WORK. 11 Sep 62 [94]p. JPRS: 15215.
Order from OTS or SLA $8.60 62-32891

Trans. of Uchenyi Meditsinskii Sovet. Byulleten' (USSR) 1962, v. 13, no. 3, p. 3-45, 50-51.

DESCRIPTORS: *Medical research, *Cancer research, Neoplasms, Children, Diseases, Infections, *Fisheries, Sanitary engineering, Diagnosis, Therapy, *Medical personnel, Scientific personnel, Training, Physiology, Pathology, *Neurology, *Endocrine glands, Public health, *Cornea, Transplantation.

Contents:
On the tasks of medical institutes in the elaboration of the problem of malignant neoplasms, by V. V. Gorodilova
On increasing the efficacy of the scientific work of the academic medical institutes, by D. I. Gol'dberg
Improve the planning of scientific researches in the field of infectious children's diseases, by A. L. Libov
Results and plans of scientific work of the department of children's infections of the Second Moscow State Medical Institute imeni N. I. Pirogov, by D. D. Lebedev
Problems of hygienic researches in the fisheries of the Far East, by L. P. Klyga
Status report on the implementation of new methods of diagnosis, treatment and prophylaxis of the principal diseases in the therapeutic institutions of Pskov oblast', by distinguished physician of the RSFSR I. M. Bitno-Shlyakhto
Experience gained in organization of scientific work and training of scientific personnel in the Department of Physiopathology, by S. S. Pol'tyrev
First plenum of the All-Russian Scientific Society of Therapeutists, by A. B. Vinogradskii
Scientific session of the Gorki Medical Institute on the problems of neuro-endocrine pathology, by A. S. Efimov
Proceedings of the Presidium of the Academic Medical Council of the RSFSR Public Health Ministry
Cornea Transplantation (Peresadka Rovgovintsy) by T. I. Eroshevskii: review by P. E. Tikhomirov
Current events.

SELECTED ABSTRACTS FROM EAST EUROPEAN TECHNICAL AND SCIENTIFIC JOURNALS: BIOLOGY AND MEDICINE (1). 13 Mar 62 [53]p. JPRS: 12943.
Order from OTS or SLA $5.60 62-23463

Consists of brief informative abstracts of selected articles published in 1961 issues of East European technical and scientific journals from Bulgaria, Czecholsovakia, East Germany, Hungary, Poland, Rumania, and Yugoslavia.

DESCRIPTORS: *Abstracts, *Biology, *Medicine, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, Yugoslavia, Viruses, Industrial medicine, Immunology, Influenza vaccines, Parasites, Plants, Virus diseases, Listeria, Virus vaccines, Veterinary medicine, Foot-and-mouth-disease, Diagnosis, Pathology, Phosphonic acids, Poliomyelitis, Epidemiology, Brucellosis, Birds, Education, Drugs, Ergot alkaloids, Meat, Cattle, Pathology, Tumors, Phosphorus compounds, Hepatitis, Contamination, Chemotherapeutic agents, Rheumatism, Hematopoiesis.

Yakovkin, A. A.
THE POSITION ANGLE METHOD FOR DETERMINATION OF LUNAR PHYSICAL LIBERATION PARAMETERS. [1962] [11]p. 5 refs. AERDL T-1624.
Order from OTS or SLA $1.60 62-33212

Trans. of Akademiya Nauk USSR, Kiev. Holovna Astronomichna Observatoriya. Izvestiya, 1961, v. 4, no. 1, p. 3-11.

DESCRIPTORS: *Moon, Photography, Mapping, Optics, Astronomical data, Surface properties.

A new method is offered for determination of the position of Mösting A relative to the lunar center of mass which will not depend on the figure of the lunar limb zone. Measurement of the position angles of the limb craters relative to Mösting A makes it possible to determine the physical libration parameters. If the central crater is situated in the optical center, all image distortions (coma, distortion, etc.) are oriented along the radii and therefore do not influence the position angles. Formulas for processing observations by the position-angle method.

BEHAVIORAL SCIENCES

Byalik, B. and Sobolev, S. L.
AN ARGUMENT ABOUT CYBERNETICS. 30 July 62 [14]p. JPRS: 14643.
Order from OTS or SLA $1.60 62-32078

Trans. from Literaturnaya Gazeta (USSR) 1962, 29 May and 2 June.

DESCRIPTORS: *Cybernetics, Human engineering, *Philosophy.

The philosopher B. Byalik, asks, "Comrades, are you serious?" with respect to contentions that it has been theoretically proven that it is possible to artificially and mechanically create living creatures; thinking, creative, capable of experiencing joy and sadness, and to reproduce themselves, which may eventually outstrip man and even enslave him. S. L. Sobolev replies, "Yes, we are quite serious." Sobolev suggests that Byalik's doubts are equivalent to a belief in God.

Pribram, K.
TOWARD A THEORY OF PHYSIOLOGICAL PSYCHOLOGY (INCLUDING COMMENT BY P. H. ANOKHIN) (K Teorii Fiziologicheskoi Psikologii). 3 Apr 62 [43]p. 157 refs. JPRS: 13302.
Order from OTS or SLA $4.60 62-23803

Trans. of #Voprosy Psikhologii (USSR) 1961, v. 7, no. 2, p. 133-159.

DESCRIPTORS: *Nervous system, Anatomy, *Physiology, *Psychology, Applied psychology, Reasoning, Response, Automation, Computers, Behavior, *Anatomical models, Cybernetics, Information theory.

Human Engineering

ACTIVITIES OF PROMINENT CHINESE COMMUNIST PERSONALITIES NO. 31. 12 July 62 [9]p. JPRS: 14451.
Order from OTS or SLA $1.10 62-25995

Contains information on the activities of the highest echelons of Chinese Communist government leaders and on other prominent personalities. The Chinese telecode number is given along with each name.

DESCRIPTORS: *Communist, *China, Leadership, Sociology.

BIOGRAPHIES OF SOVIET SCIENTISTS. 7 Sep 62 [47]p. JPRS: 15171.
Order from OTS or SLA $4.60 62-32863

Trans. of 15 selected biographical articles from various Soviet sources.

DESCRIPTORS: *Scientific personnel, Personnel, History.

Contents:
F. P. Belyankin, V. Ya. Braitsev, I. M. Gol'dberg, I. S. Kainarskii, M. N. Khanin, I. S. Kolesnikov, V. N. Kondrat'ev, G. V. Kurdyumov, A. A. Lebedev, I. T. Mil'chenko, A. A. Shmidt, V. I. Spitsyn, L. N. Sretenskii, M. I. Vinogradov, V. K. Zhgenti.

FROM THE COMMITTEE FOR LENIN PRIZES IN THE AREA OF SCIENCE AND MECHANICS OF THE SOVIET OF MINISTERS OF THE USSR. 26 Mar 62 [13]p. 31 refs. JPRS: 13230.
Order from OTS or SLA $1.60 62-23761

Trans. from Izvestiya (USSR) 1962, 16 Feb, p. 3.

DESCRIPTORS: *Scientific personnel, Science, Engineering.

INFORMATION ON ACADEMIC RANKS AND DEGREES. 3 Aug 62 [13]p. JPRS: 14730.
Order from OTS or SLA $1.60 62-32205

Trans. of Chemicke Listy (Czechoslovakia) 1962, v. 56, no. 4, p. 476; no. 5, p. 619 and from Otechestven Front (Bulgaria) 1962, v. 19, no. 5527, p. 2.

DESCRIPTORS: *Scientific personnel, Personnel, *Agriculture, *Chemists, Theses, Czechoslovakia, Bulgaria, Education.

Contents:
Candidacy dissertations in chemistry in Czechoslovakia
Bulgarian Academy of Agricultural Sciences Announcement no. 256, 4 May 62.

REGULATIONS ON THE TRAINING OF ENGINEERS IN HUNGARY. 29 June 61 [12]p. JPRS: 8524.
Order from OTS or SLA $1.60 62-19375

Trans. of Vizugyi Ertesito (Hungary) 1961, v. 3, no. 2/3, p. 9-13.

DESCRIPTORS: *Engineering personnel, Personnel, Training, Education, *Hungary

Contents:
On the post graduate training of engineers and on the Institute of Post Graduate Engineering.
University training of specialist engineers in Hungary

Vinogradov, V. A.
SCIENTIFIC CONTACTS BETWEEN SOVIET AND AMERICAN SCIENTISTS, tr. by B. W. Kuvshinoff. 15 Aug 62, 4p. APL/JHU TG 230-T322.
Order from OTS $0.50 62-11775

Trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 6, p. 83-86.

DESCRIPTORS: *Scientific personnel, Scientific organizations.

BIOLOGICAL SCIENCES

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 21 (BIOLOGY SERIES). 17 Sep 62 [23]p. JPRS: 15300.
Order from OTS or SLA $2.60 62-33043

Trans. of selected abstracts from Referativnyi Zhurnal. Biologiya (USSR) 1961, no. 9.

DESCRIPTORS: *Bibliography, *Abstracts, *Agriculture, *Animals, *Microbiology, *Parasitology, *Pathology, *Pharmacology, *Physiology, *Plants, *Soils.

MEDICAL AND BIOLOGICAL RESEARCH AND DEVELOPMENT IN ISRAEL. 25 May 62 [27]p. JPRS: 13871.
Order from OTS or SLA $2.60 62-24986

Trans. from Haboker (Israel) 1962, 20 Feb and 28 Mar; Ma'ariv (Israel) 1962, 26 Jan; Omer (Israel) 1962, 21 Mar; Davar (Israel) 1962, 18 Apr; Letzte Nyes (Israel) 1962, 8 Apr.

DESCRIPTORS: *Cancer, *Medical research, *Viruses, Therapy, *Plants, *Pest control, *Insects, Scientific organizations, *Citrus fruits, Microbiology, *Heart, Diseases, *Israel

Contents:
Discovery of the cancer-causing virus
Cure for cancer sought in plants
Biological extermination of plant pests
Biological institute in Hefer Valley
School of microbiology at the [Hebrew] University
Cardiac diseases

REPORT ON SOVIET MEDICAL WORK. 11 Sep 62 [94]p. JPRS: 15215.
Order from OTS or SLA $8.60 62-32891

Trans. of Uchenyi Meditsinskii Sovet. Byulleten' (USSR) 1962, v. 13, no. 3, p. 3-45, 50-51.

DESCRIPTORS: *Medical research, *Cancer research, Neoplasms, Children, Diseases, Infections, *Fisheries, Sanitary engineering, Diagnosis, Therapy, *Medical personnel, Scientific personnel, Training, Physiology, Pathology, *Neurology, *Endocrine glands, Public health, *Cornea, Transplantation.

Contents:
On the tasks of medical institutes in the elaboration of the problem of malignant neoplasms, by V. V. Gorodilova
On increasing the efficacy of the scientific work of the academic medical institutes, by D. I. Gol'dberg
Improve the planning of scientific researches in the field of infectious children's diseases, by A. L. Libov
Results and plans of scientific work of the department of children's infections of the Second Moscow State Medical Institute imeni N. I. Pirogov, by D. D. Lebedev
Problems of hygienic researches in the fisheries of the Far East, by L. P. Klyga
Status report on the implementation of new methods of diagnosis, treatment and prophylaxis of the principal diseases in the therapeutic institutions of Pskov oblast', by distinguished physician of the RSFSR I. M. Bitno-Shlyakhto
Experience gained in organization of scientific work and training of scientific personnel in the Department of Physiopathology, by S. S. Pol'tyrev
First plenum of the All-Russian Scientific Society of Therapeutists, by A. B. Vinogradskii
Scientific session of the Gorki Medical Institute on the problems of neuro-endocrine pathology, by A. S. Efimov
Proceedings of the Presidium of the Academic Medical Council of the RSFSR Public Health Ministry
Cornea Transplantation (Peresadka Rovgovintsy) by T. I. Eroshevskii: review by P. E. Tikhomirov
Current events.

SELECTED ABSTRACTS FROM EAST EUROPEAN TECHNICAL AND SCIENTIFIC JOURNALS: BIOLOGY AND MEDICINE (1). 13 Mar 62 [53]p. JPRS: 12943.
Order from OTS or SLA $5.60 62-23463

Consists of brief informative abstracts of selected articles published in 1961 issues of East European technical and scientific journals from Bulgaria, Czecholsovakia, East Germany, Hungary, Poland, Rumania, and Yugoslavia.

DESCRIPTORS: *Abstracts, *Biology, *Medicine, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, Yugoslavia, Viruses, Industrial medicine, Immunology, Influenza vaccines, Parasites, Plants, Virus diseases, Listeria, Virus vaccines, Veterinary medicine, Foot-and-mouth-disease, Diagnosis, Pathology, Phosphonic acids, Poliomyelitis, Epidemiology, Brucellosis, Birds, Education, Drugs, Ergot alkaloids, Meat, Cattle, Pathology, Tumors, Phosphorus compounds, Hepatitis, Contamination, Chemotherapeutic agents, Rheumatism, Hematopoiesis.

SOVIET BIOMEDICAL RESEARCH. 29 Mar 62 [19]p. JPRS: 13245.
Order from OTS or SLA $1.60 62-23768

Trans. of Nedelya (USSR) 1961, no. 19, p. 8; and from Pravda, Leningrad (USSR) 1961, 7 Oct, p. 4; Pravda Vostoka (USSR) 1961, 4 Dec, p. 4; Izvestiya (USSR) 1961, no. 17(13717) p. 4; Trud [Moscow] (USSR) 1961, 13 Sep, p. 2.

DESCRIPTORS: *Agriculture, *Radiation effects, *Artificial heart, Brain, *Surgery, *Cancer, Nucleic acids, *Public health

Contents:
Tests of irradiated inoculants in the Baltic, by E. Yulina
Artificial heart, by A. Bukhtiyarov
The surgeon and the brain, by V. Khrapov
Reaching cancer through its nucleic acids, by I. L. Knunyants, condensed by E. Chechik
Some problems facing medical science, by T. Timakov

TNO INSTITUTE FOR HEALTH TECHNOLOGY. 7 Sep 62 [10]p. JPRS: 15179.
Order from OTS or SLA $1.10 62-32856

Trans. of mono. TNO Wegwijzer (TNO Guide) The Hague, Dec 61, p. 89-100.

DESCRIPTORS: *Scientific organizations, *Scientific personnel.

Babios, Antal.
THE DIVISION OF BIOLOGICAL AND MEDICAL SCIENCES OF THE HUNGARIAN ACADEMY OF SCIENCES: ANNUAL REPORT. 29 May 62 [25]p. JPRS: 13921.
Order from OTS or SLA $2.60 62-25015

Trans. of Magyar Tudomanyos Akademia Biologiai es Orvosi Tudomanyok Osztalyanak Kozlemenyei (Hungary) [1961] v. 12, no. 4, p. 347-366.

DESCRIPTORS: *Biology, *Medicine, *Hungary.

Bogorov, V. G., Beklemishev, K. V., and Vinogradov, M. E.
THE DISTRIBUTION OF PLANKTON IN THE PACIFIC OCEAN AND ITS RELATION TO GEOGRAPHICAL ZONATION. [1962] [8]p.
Order from OTS or SLA $1.10 62-24044

Trans. from mono. (paper) Contributed Papers on Plankton and Marine Productivity, Pacific Science Congress (no. 10) Honolulu, Hawaii, Aug 61.

DESCRIPTORS: *Aquatic plants, *Aquatic animals, Distribution, *Pacific ocean, Geography, Ecology.

Bonnet.
ON EMBRYOTROPHY. [1962] 11p.
Order from SLA $1.60 62-16298

Trans. of Deutsche Med[izinische] W[ochen]schr[ift] (Germany) 1899 [v. 25] no. 45, p. 733-735.

DESCRIPTORS: Embryology, *Embryos, *Nutrition, Mammals, Fetal membranes

Dvorkin, G. A. and Krinskii, V. I.
LIGHT ABSORPTION OF DEOXYRIBONUCLEIC ACID SOLUTION ORIENTATED IN AN ELECTRIC FIELD. 7 Feb 62 [10]p. 11 refs. JPRS: 12370.
Order from OTS or SLA $1.10 62-15946

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 140, no. 4, p. 942-945.

DESCRIPTORS: *Nucleic acids, Solutions, Light, Absorption, Electric fields, *Biophysics, Molecules

Vitgeft, A. E.
CONFERENCE ON THE USE OF MATHEMATICAL METHODS IN BIOLOGY (NO. 3) LENINGRAD U., 23-28 Jan 61. 25 Apr 62 [10]p. JPRS: 13548.
Order from OTS or SLA $1.10 62-24252

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya [1962] v. 27, no. 1, p. 151-152.

DESCRIPTORS: Conferences, *Applied mathematics, *Biology, Mathematics

Anatomy and Physiology

LIFE SUPPORT SYSTEMS. A. BIOSCIENCES: SOVIET LITERATURE. Monthly rept. no. 11 on AID Work Assignment no. 22 (Project PTT541502). 31 May 62 [46]p. 9 refs. AID rept. 62-91; AD-283005; [NASA N62-14538].
Order from OTS or SLA $4.60 62-32779

DESCRIPTORS: *Space medicine, *Physiology, *Satellite vehicles, Spaceships, *Ecology, Radiobiology, Laboratory animals, Literature

Contents:
Space medicine and biology
Space physiology
Space vehicle ecology

[MEDICAL WORKER] 1962 [VOL. 25] 6 FEB: SELECTED ARTICLES. 13 July 62 [26]p. JPRS: 14450.
Order from OTS or SLA $2.60 62-25994

Trans. from Meditsinskii Rabotnik (USSR) 1962 [v. 25] 6 Feb, p. 2 and 3.
##Another trans. is available from OTS or SLA $1.10 as 62-24337, FTD-TT-62-431, 21 Mar 62 [4]p.

DESCRIPTORS: Ecology, *Adaptation (Physiology), *Endocrine glands, Medical personnel, *Genetics, *Immunology, Stress (Physiology), *Weightlessness.

Contents:
General principles involved in the formation of an organism's protective functions, by P. K. Anokhin
The methodological foundations and essence of compensatory and adaptive processes, by I. V. Davydovskii
The significance of the endocrine factor in adaptation and compensation, by V. G. Baranov
On integrity and adherence to principle, by A. Lebedev and V. Chigrai
The conditions of professional work, by A. A. Letavet
An organism and foreign genetic information, by L. A. Zil'ber
The cyto-physiological mechanisms of immunogenesis, by P. F. Zdrodovskii
Resistance of microorganisms as a genetic problem, by V. D. Timakov and others
New concepts of immunogenesis, by N. N. Zhukov-Verezhnikov
#Protective adaptations of the body under stress and in a state of weightlessness, by V. V. Parin and others
Discussion of the reports.

RUSSIAN PHYSIOLOGICAL RESEARCH. 20 Aug 62 [35]p. 71 refs. JPRS: 14903.
Order from OTS or SLA $3.60 62-32452

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1961 [v. 26] no. 4, p. 561-573 and 630-641.

DESCRIPTORS: *Carbon dioxide, *Physiology, *Molds, Morphology, *Tissues (Biology), *Cells (Biology), *Leucocytes.

Contents:
Role of carbon dioxide in the physiology of molds, by S. A. Barinova
Cytomorphological reaction of areolar connective tissue to leucocyte factors, by N. V. Popova.

Fokina, L. N. and Samokhvalov, G. I.
PHYSIOLOGICALLY ACTIVE POLYPEPTIDES. 15 Mar 62 [15]p. 102 refs. JPRS: 13003.
Order from OTS or SLA $1.60 62-23628

Trans. of Meditsinskaya Promyshlennost' SSSR, 1961, v. 15, no. 11, p. 3-12.

DESCRIPTORS: *Peptides, *Polymers, *Proteins.

Karapetyan, S. K.
THE ROLE OF LIGHT IN PHYSIOLOGICAL STIMULATION OF THE ANIMAL ORGANISM: CONCLUSIONS [AND] TABLE OF CONTENTS. Soviet Studies in Animal Physiology. 6 Sep 62 [8]p. JPRS: 15137.
Order from OTS or SLA $1.10 62-32704

Trans. of mono. Rol'Sveta v Fiziologicheskoi Stimulyatsii Zhivotnogo Organizma, Erevan, 1961, p. 119-122 and 131-132.

DESCRIPTORS: *Light, Stimulation, *Birds, Physiology, Metabolism, Endocrine glands, Secretions, *Digestive system, *Gonads, Rhythum, Animals.

Letunov, S. P. and Motylyanskaya, R. E.
THE NEED FOR A PROPER PHYSICAL TRAINING PROGRAM. 7 Sep 62 [8]p. JPRS: 15175.
Order from OTS or SLA $1.10 62-32855

Trans. of mono. (brochure) Sport i Serdtse (Sport and the Heart) Moscow, 1961, p. 37-40.

DESCRIPTORS: *Physical fitness, *Exercise, Circulatory system.

Lyudkovskaya, R. G. and Chailakhyan, L. M.
SOME LAWS OF THE LIGHT STIMULATION OF THE GIANT AXON OF THE CUTTLEFISH [AND] MEASUREMENT OF THE REST POTENTIAL AND THE ACTION POTENTIAL OF THE GIANT FIBER OF THE SQUID UNDER DIFFERENT CONDITIONS OF DISCHARGE. 16 Feb 62 [26]p. 21 refs. JPRS: 12645.
Order from OTS or SLA $2.60 62-19754

Trans. of #Biofizika (USSR) 1961, v. 6, no. 3, p. 300-316.

DESCRIPTORS: *Light, *Stimulation, *Nerves, Bioelectrons, Sensitivity, Fibers, Reactions (Psychology), Squids, Mollusca.

Visible light caused stimulation of the isolated giant axon of the Sepia, when sensitized with dyes (neutral red, safranin, eosin, methylene blue, etc) under conditions of lowered temperature (6-8°). The stimulating action of light is proportional to its intensity and inversely proportional to the duration of the light flash. With sub-threshold intensity of the light stimulus, intermittent light with a ratio of 0.25-0.20 between the durations of the light and dark phases is the most effective. Brief illumination of the axon is accompanied by a rise in light and electric stimulability. The stimulating action of a series of sub-threshold light impulses cumulates to the threshold strength. (Lyudkovskaya) With lateral insertion of the microelectrode into the giant nerve fiber of the squid Ommastrephes pacificus sloanei, the MP was recorded in the state of rest and of stimulation under different experimental conditions (different frequencies of irritation, the action of heightened concentrations of potassium ions). The magnitude of the RP averaged 54 mv, the AP 85 mv. Upward movement of the intracellular electrode sharply reduced the MP in the state of rest, whereas the amplitude of the "overshoot" remained practically unchanged. (Chailakhyan)

Margolin, G. M.
INVESTIGATION OF TONIC REFLEXES ON STIMULATION OF DIFFERENT HUMAN SENSE ORGANS. 28 May 62 [8]p. 7 refs. FTD-TT-62-558.
Order from OTS or SLA $1.10 62-32522

Unedited rough draft trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 1, p. 95-97.

DESCRIPTORS: *Reflexes, *Stimulation, *Sense organs, Man, Muscles.

Pavlova, L. P.
THE REFLECTION OF HUMAN TYPOLOGICAL CHARACTERISTICS DURING THE COURSE OF CREATING WORK FITNESS BY THE ERGOGRAPHIC METHOD. 21 June 62 [16]p. JPRS: 14219.
Order from OTS or SLA $1.60 62-25482

Trans. of Leningrad U. Vestnik (USSR) 1962 [v. 17] no. 3, Seriya Biologii, no. 1, p. 124-133.

DESCRIPTORS: Physiology, Physical fitness, Labor, Motor reactions, *Fatigue (Physiology), *Exercise, *Nervous system, Ergographs, Electromyography.

During the course of formation of a motor habit under conditions of work on an ergograph pronounced individual differences were observed in the rate of increase in the ability to work. As a result of the analysis of individual practice curves three indices were advanced: (1) the degree of expression and duration of the initial stage of practice, associated with negative induction of inhibition from primarily excited nerve cells and a low maximum ability to work; (2) the rate of transition from the first stage to the second and the degree of expression of the second stage - generalization of excitation (the speed and degree of irradiation of excitation); and (3) the speed of transition to the third stage - the concentration of nerve processes (the rate and degree of concentration of excitation). All three criteria permit the demonstration of the four well-known typological groups which are different with regard to strength, balance and mobility of the nerve processes. The assumption is made that study of the individual dynamics of establishment of the motor dominant through an analysis of facts on the level of rules and regulations of systemic reactions is one of the possible means of demonstrating the human typological characteristics. (Author)

Vasil'ev, A. G.
ELECTROPHYSIOLOGIC STUDY OF EXERCISES LEADING TO MASTERING THE HORIZONTAL SUPPORT ON CROSSBARS. 7 June 62 [9]p. JPRS: 14038.
Order from OTS or SLA $1.10 62-25051

Trans. of Teoriya i Praktika Fizicheskoi Kul'tury (USSR) 1961, v. 24, no. 10, p. 757-760.

DESCRIPTORS: *Bioelectronics, Exercise, *Muscles, Arms, Kymography, Physical fitness, Electromyography.

A 4-channel electromyographic device was used to determine (1) the basic muscle groups that are used in performing the horizontal support in crossbars, and (2) the characteristics of the activity of these muscles during the different preparatory exercises leading to mastery of the ability. In performing the exercise the greatest electrical activity was shown by the biceps muscle, the external head of the triceps, the anterior and posterior bundles of the deltoid muscle, the pectoralis major muscle, the trapezius muscle (at the level of the 6-8 thoracic vertebrae), and the long muscle of the spine. It was also discovered that certain preparatory exercises, dispite their apparent similarity to the others, do not permit the attainment of the necessary magnitude and duration of muscular tension.

Vereshchagin, S. M. and Syminskii, I. A.
EFECTOS FISIOLOGICOS DEL ACIDO GAMMA-AMINOBUTIRICO (Fiziologicheskie Effekty Gamma-aminomaslyanoi Kisloty) (Physiologic Effects of the Gamma-aminobutyric Acid) 13p. 11 refs. CID: 62-64. (text in Spanish).
Order from OTS or ETC $1.10 62-26264

Trans. of #Fiziologicheskii Zhurnal SSSR, 1960 [v. 46] no. 10, p. 1287-1292.

DESCRIPTORS: *Aminoacids, Physiology.

Biochemistry

Feiginson, N.
SOVIETS DEBATE GENETIC ROLE OF DNA. 31 Aug 62 [7]p. JPRS: 15075.
Order from OTS or SLA $1.10 62-32882

Trans. from Izvestiya (USSR) 1962, 176(14030) 24 July 62.

DESCRIPTORS: Genetics, *Nucleic acids.

Several errors are pointed out that appeared in a previous article (Izvestiya No. 146) by I. Knunyants entitled "The Secret of the Life Force".

Hitier, Henri and Izard, Camille.
EXPERIMENTS WITH ANTIBIOTICS IN THE CONTROL OF WINDFIRE OF TOBACCO. [1962] 4p.
Order from K-H $5.00 K-H 3270 b

Trans. of mono. Congr[ès] Intern[ational de] Botan[ique] (no. 8) Paris, 1954. Rapp[orts] et Commun[ications] sect. (?) p. 83-84.

DESCRIPTORS: *Antibiotics, Control, *Tobacco, *Smokes.

Hollo, J. and Szejtli, J.
STARCH RESEARCH AT THE INSTITUT F[ÜR] LANDWIRTSCHAFTLICH-CHEMISCHE TECHNOLOGIE, TECHNISCHE UNIVERSITÄT, BUDAPEST. Mar 62, 9p. (figs. omitted) 35 refs.
Order from SLA $1.10 62-16498

Trans. of [die] Stärke (West Germany) 1961, v. 13, no. 5, p. 174-181.

DESCRIPTORS: *Starches, *Scientific research, Starch solutions, Radioactive isotopes, Chemical engineering.

Kertesz, Denis.
STUDIES ON MELANOGENESIS: ON THE EXISTENCE OF 5, 6-DIHYDROXYINDOLE AS ESSENTIAL INTERMEDIATE PRODUCTS DURING THE ENZYMATIC OXIDATION OF TYROSINE, DOPA, AND ADRENALINE. [1962] 14p.
Order from K-H $17.50 K-H 3160-f

Trans. of Soc[iété de] Chim[ie] Biol[ogique]. Bull[etin] (France) 1953, v. 35, p. 1157-1165.

DESCRIPTORS: *Melanin, Pigments, *Indoles, Hydroxides, Oxidation, *Tyrosine, *Enzymes, *Epinephrine.

Nabet, P. and Wolff, R.
INFLUENCE OF SORBITOL ON VITAMIN B_{12} BINDING IN VARIOUS ORGANS. [1962] 4p. 8 refs.
Order from SLA $1.10 62-18000

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Seances] (France) 1961, v. 155, p. 1099-1102.

DESCRIPTORS: Vitamins, *Vitamin B complex, *Absorption, Intestine, Liver, Distribution, *Sorbitol.

Experiments show that the passage of vitamin B_{12} from the intestinal orifice towards the intestines and the liver as affected by sorbitol, takes place differently than the normally observed pattern. The sorbitol seems to exercise its action in the intestinal orifice by indirect action in stimulating the secretions in the digestive tract. Sorbitol exercises an action beyond the intestinal barrier by modifying the distribution of vitamin B_{12} in the organs.

Botany

Gligic, V.
STUDY OF POLYPLOIDY INDUCED BY COLCHICINE (Ispitivanje Poliploidije Izazvane Kolhicinom) tr. by Radmila Pavlovic. 1962, 10p. 12 refs.
PL-480 Agr.
Order from OTS $0.50 60-21689

Trans. of [Zemaljski Muzej u Bosni i Hercegovini]. Glasnik (Yugoslavia) 1945, p. 45-53.

DESCRIPTORS: Plants, *Buckwheat, Pollen, *Biochemical genetics, Chromosomes, *Mutations, *Colchicine.

Plants with obvious signs of polyploidy were produced following a 12 hour treatment of germinated buckwheat seed with a 0.1 percent colchicine solution. In addition to dwarf plants, there were others with the characteristics of mixochimeras that had more or less normal growth with excessively long petioles. Polyploidy was especially evident in these plants by the presence of giant pollen grains, in addition to normal grains, with a volume 27 times that of the normal ones. There were 6 very large seeds among those produced on these plants (8.5 mm long and 50 mg in weight). Only 2 plants grew from these 6 seeds in the following generation. These were somewhat larger than normal with large leaves and flowers, normal and giant pollen grains, and somewhat more resistant to drought than were normal plants. One of these plants produced 19 seeds and the other only 6 large seeds (8 mm, 50 mg). (Author)

Guseva, A. R. and Nestyuk, M. N.
METHODS FOR THE DETERMINATION OF THE FLAVONE SUBSTANCES IN PLANTS. [1962] 7p.
Order from K-H $8.75 K-H 1705

Trans. of Biokhimiya (USSR) 1953, v. 18, no. 4, p. 480-483.

DESCRIPTORS: Quantitative analysis, *Flavones, *Plants.

Il'in, G. S.
INVESTIGATION OF PROCESS OF FORMATION OF NICOTINE DURING GERMINATION OF TOBACCO SEEDS. [1962] 41p.
Order from K-H $51.25 K-H 3998-b

Trans. from [Vsesoyuznyi Nauchno-Issledovatel'skii Institut Tabachnoi i Makhorkovoi Promyshlennosti. Trudy] (USSR) 1929, v. 57.

DESCRIPTORS: *Nicotine, Biosynthesis, *Tobacco, *Seeds.

Matsusima, Hidetaro.
ENZYMES OF FRESH TOBACCO LEAVES. [1962] 16p.
Order from K-H $20.00 K-H 3758

Trans. of Taihoku Soc[iety of] Agr[iculture and] Forestry. J[ournal] (Formosa) 1937, v. 1, p. 271-280.

DESCRIPTORS: *Tobacco, Plants, *Enzymes.

General Biology

CELL-COSMOS-MARS. 5 June 62 [4]p.
FTD-TT-62-603.
Order from OTS or SLA $1.10 62-32516

Unedited rough draft trans. from Pravda Ukrainy (USSR) 1961, 26 Aug, p. 4.

DESCRIPTORS: Cells (Biology), *Resuscitation, *Protozoa, Viability, Ecology, *Mars.

By producing conditions similar to those which possibly exist on Mars, our biologists have established that certain single-cell animals especially well adapted to a desert environment can multiply in an environment approximating that of Mars. (Extracted)

Grosskinsky, Linde and Sturmer, Egon.
ON THE INFLUENCE OF TOBACCO SMOKE ON THE RESPIRATION OF YEAST CELLS. [1962] 6p.
Order from K-H $7.50 K-H 3324-a

Trans. of Z[eitschrift] f[ür die] Ges[amte] Exper[imentelle] Med[izin] (Germany) 1953, v. 122, no. 3, p. 167-169.

DESCRIPTORS: *Yeasts, *Respiration, *Tobacco, Smokes.

Kliewe, H. and Oberfield, F.
THE BACTERICIDAL EFFECT OF SMOKE.
[1962] 15p.
Order from K-H $18.75 K-H 3160-g

Trans. from [Zeitschrift] f[ür] Immun[itatsforschung und] Exp[erimentelle] Therap[ie] (West Germany) 1950, v. 107.

DESCRIPTORS: *Smokes, *Bactericides.

Medical Specialties and Equipment

SOVIET PUBLIC HEALTH OF KIRGIZIYA, 1962, NO. 2: [SELECTED] TRANSLATIONS. 16 Aug 62 [26]p. JPRS: 14861.
Order from OTS or SLA $2.60 62-32466

Trans. of Sovetskoe Zdravookhranenie Kirgizii (USSR) 1962, no. 2, p. 34-49.

DESCRIPTORS: *Ionization, Radiation effects, *Respiratory system, Animals, *Perspiration, *Climatic factors, Deserts, Public health, Climate, *Contamination, *Air, *Urban areas, Microogranisms.

Contents:
Effect of ionizing radiation on the upper respiratory tract of experimental animals, by R. I. Stepanova
Characteristics of prespiration during acclimatization in a desert, by P. A. Solomko
Hygienic problems of the climate and microclimate in the city of Frunze, rept. I., by I. M. Khakhalina.

Mazo, R. E.
ELECTROCARDIOGRAMS OF HEALTHY CHILDREN: CONCLUSION. 18 Sep 62 [5]p. JPRS: 15326.
Order from OTS or SLA $1.10 62-33045

Trans. of mono. Elektrokardiogrammy Zdorovykh Detei, Minsk, 1961, p. 183-185.

DESCRIPTORS: *Electrocardiography, Children, Age, Medical examination, Heart.

Venediktov, A. B. and Tishchenko, M. I.
BALLISTODYNAMOCARDIOGRAPH TYPE BDKG-01. 15 May 62 [19]p. 11 refs. JPRS: 13771.
Order from OTS or SLA $1.60 62-24746

Trans. of Meditsinskaya Promyshlennost' SSSR, 1962, [v. 16] no. 2, p. 53-58.

DESCRIPTORS: *Ballistocardiography, *Dynamics, *Medical equipment, Dynanometers, Electrocardiography.

Yazdovskii, V. I.
ACHIEVEMENTS AND PRINCIPAL GOALS IN SPACE BIOLOGY. 26 July 62 [8]p. JPRS: 14618.
Order from OTS or SLA $1.10 62-32069

Trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 4, p. 15-20.

DESCRIPTORS: *Space medicine, Biology.

Zubkov, B. and Muslin, E.
THE "MEDICINE AND ENGINEERING" COMBINE. 13 Mar 62 [10]p. JPRS: 12952.
Order from OTS or SLA $1.10 62-23391

Trans. of Znanie-Sila (USSR) 1962 [v. 37] no. 1, p. 14-17.

DESCRIPTORS: *Medical equipment, Diagnosis, Therapy.

Microbiology

ACTA MICROBIOLOGICA SINICA, 1959, VOL. 7, NO. 3: SELECTED TRANSLATIONS. 15 Aug 61 [61]p. 40 refs. JPRS: 9607.
Order from OTS or SLA $6.60 61-27726

Trans. of Wei Sheng Wu Hsüeh Pao (Chinese People's Republic) 1959, v. 7, no. 3, p. 189-195, 197-204, 209-222.

DESCRIPTORS: *Microbiology, Immunology, *Rickettsia, *Trombiculidae, *Mites, Histology, Skin, *Parasites, Feeding, *Mosquitoes, *Malaria, Disease carriers, Parasitic infections, Wuchereria, *Filariasis, China.

Contents:
Further study on the immunology of Rickettsia tsutsugamushi, by Yu En-shu and others
Studies on Tsutsugamushi. XI. Studies on the penetration of host tissue and histological changes caused by the chigger mite, Neoshöngastia Gallinarum, Hatori (Acariformes, Trombiculidae) by Ch'iu Ming-hua and Hsu Yin-ch'i
Studies on the feeding habits of mosquitos in Foochow, by Y. S. Huang and others
A preliminary survey on the Anopheles Hyrcanus group from Hung-ya and Chia-chiang of Szechuan province, by Liu Wei-teh and Liu Chin-fa.

Albrecht, Joachim.
METHODS FOR DETECTING MICROORGANISMS IN AEROSOLFORM (Methoden zum Nachweis von Mikroorganismen in Aerosolform). [1959] [18]p. (1 table 2 figs. 105 refs. omitted). F-TS-9649.
Order from OTS or SLA $1.60 60-13292

Trans. of [Zeitschrift für Aerosol-Forschung und-Therapie (West Germany) 1958, v. 7, no. 1, p. 50-61].

DESCRIPTORS: *Aerosols, *Microorganisms, Detection, Viability, Collecting methods, Determination, Impingers, Centrifuges.

In order to obtain sufficiently exact data about the number, species and viability of air-microorganisms, a series of requirements are undertaken for detection-procedures. The conventional procedures

fulfill these demands in varying degrees. The inability of quantitative comprehension for all species of viable microorganisms which can be separated from the air, is common to all the methods. The reasons for this are the methodical difficulties in detection of such germs which do not grow in artificial culture-mediums. (Author)

Kolesnik, Z. A. and Shmonova, N. I.
TOWARD THE STUDY OF THE ALTERATION OF PETROLEUM, UNDER ANAEROBIC CONDITIONS, UNDER THE INFLUENCE OF BACTERIA OF THE PSEUDOMONAS GENUS. [1962] [6]p.
Order from OTS or SLA $1.10 62-16425

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 115 [no. 6] p. 1197-1199.
Another trans. is available from OTS or SLA $1.10 as 61-14965 [1960] 5p.

DESCRIPTORS: *Petroleum, Anaerobiology, *Pseudomonas, *Biosynthesis, Biochemistry.

Experiments conducted under anaerobic conditions reveal the effect of mircoorganisms on the nature of the alteration of petroleum. The direction of the resulting processes depends on the qualitative composition of the bacteria. The predominance of some physiological groups of bacteria over others in microbiocenosis leads to various changes in the character of petroleum. (Author)

Mikhailov, Ivan Fedorovich and D'yakov, Sergei Ivanovich.
LUMINESCENT MICROSCOPY: [SELECTED PARTS]. 18 Sep 62 [60]p. JPRS: 15320.
Order from OTS or SLA $5.60 62-33109

Trans. of mono. Lyuminestsentnaya Mikroskopiya, Moscow, 1961, p. 120-122, 175-205, 222-223.

DESCRIPTORS: *Microscopy, *Biological stains, Luminescent,materials, Microbiology, Bacteria, *Viruses, *Antibodies, *Immunology,

Contents:
Luminescent microagglutination
The use of the method of fluorescent antibodies in microbiology
The use of the method of fluorescent antibodies in virology
The use of the method of fluorescent antibodies in immunology
Table of contents.

Robyn, G.
THE "SPHERULES" OF THE PNEUMOCOCCUS. [1962] 4p.
Order from K-H $5.00 K-H 5276

Trans. of Société de Biologie [et de ses Filiales]. Comptes Rendus des Séances (France) 1955 [v. 149] no. 12, p. 2269.

DESCRIPTORS: *Pneumococcus, Identification.

Ryzhkov, V. L.
THE PHYSIOLOGY OF VIRUSES AND THE CHEMOTHERAPY OF VIRAL DISEASES. 9 Feb 62 [9]p. 5 refs. JPRS: 12479.
Order from OTS or SLA $1.10 62-15935

Trans. of Akademiya Nauk SSSR. Vestnik, 1961, v. 31, no. 8, p. 59-63.

DESCRIPTORS: *Viruses, *Physiology, Chemotherapeutic agents, *Virus diseases.

Vol'fson, L. G., Volodkovich, S. D. and Mel'nikov, N. N.
INVESTIGACIONES EN EL CAMPO DE LOS INSECTOFUNGICIDAS. XXIV. NUEVO METODO DE OBTENCION DE LOS ESTERES HALOGENOFENILICOS DE LOS SULFOACIDOS (Iz Oblasti Organicheskikh Insekto fungitsidov. XXIV. Novyi Sposob Polucheniya Galoidfenilovykh Efirov Sul'fokislot) (Research on Insect-fungicides. XXIV. A New Method for the Obtention of Sulfoacid Phenylhalogen Esters). 7p. 4 refs. CID: 62-84. (text in Spanish).
Order from OTS or ETC $0.90 62-26284

Trans. of #Zhurnal Obschei Khimii (USSR) 1956, [v. 26] no. 9, p. 2579-2581.

DESCRIPTORS: Insecticides, *Fungicides.

Volodkovich, S. D., Vol'fson, L. G. and others.
SOBRE LA OBTENCION DEL INSECTICIDA HEPTACLORO (O Poluchenii Insektisida Geptakhlora) (On the Obtention of Heptachloride Insecticide). 21p. 29 refs. CID: 62-69. (text in Spanish). (Foreign text included).
Order from OTS or ETC $1.50 62-26269

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1960, [v. 33] no. 1, p. 227-233.

DESCRIPTORS: *Insecticides, Halocarbons.

Neurology and Psychiatry

ON THE PROBLEMS OF NEUROPATHOLOGY AND PSYCHIATRY (O Zadachakh Nevropatologii i Psikhiatrii). 23 May 62 [36]p. JPRS: 13852.
Order from OTS or SLA $3.60 62-25010

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1962, v. 62, no. 1, p. 3-14.

DESCRIPTORS: *Nervous system, Pathology, *Psychiatry.

PROBLEMS OF PSYCHIATRY, 1959, VOL. 3. [SELECTED ARTICLES]. 12 Mar 62 [23]p. (25 figs. omitted) 12 refs. JPRS: 12972.
Order from OTS or SLA $2.60 62-23456

Trans. of Voprosy Psikhiatrii (USSR) 1959, v. 3, p. 407-436.

DESCRIPTORS: *Psychiatry, *Bioelectronics, Brain, Barbiturates, *Neuromuscular transmission, *Excision, *Pancreas, Psychoses.

Contents:
General features and specific properties of bio-electric changes in the brain under the influence of various barbiturates, by I. S. Robiner
Results of a comparative study of the morphology of the synaptic apparatus under normal conditions, during depancreatization and during catatonia, by V. N. Russkikh and V. V. Russkikh.

Makarov, P. O. and Nevskaya, A. A.
THE BIOPHYSICS OF NERVE SIGNALING. 5 July 62 [8]p. 4 refs. JPRS: 14382.
Order from OTS or SLA $1.10 62-25604

Trans. of #Byulleten' Eksperimental'noi Biologii i Meditsiny (USSR) 1962 [v. 53] no. 3, p. 3-7.

DESCRIPTORS: *Neuromuscular transmission, Nerves, Signals, *Biophysics.

Trofimova, T. A.
TRANSFORMATION OF REFLEX REACTIONS OF THE CARDIOVASCULAR SYSTEM FROM PRESSOR TO DEPRESSOR DURING NARCOSIS. [1961] 5p. (2 figs. omitted) 2 refs.
Order from OTS or SLA $1.10 62-10713

Trans. of Byull[eten'] Eksp[erimental'noi] Biol[ogii] i Med[itsiny] (USSR) 1955, v. 39, no. 2, p. 21-23.

DESCRIPTORS: Nervous system, Reflexes, *Stimulation, Dilation, *Stomach, *Blood pressure, *Respiration, Drugs, Vasomotor drugs, *Anesthetics.

The blood pressure and respiratory rate of 28 cats were determined before and after distention of the stomach with air. The blood pressure and respiratory rate rose during this procedure. A transition of the pressor reaction to depressor reaction did not occur when the force and duration of the dilation was increased nor when the sciatic nerve was electrically stimulated during dilation. Ether, urethane and novacaine narcosis all produced a transformation from pressor to depressor of the response of the blood pressure and respiration to dilation of the stomach. The action of novacaine was weaker than that of ether or uthane narcosis. In response to stimulation of the mechanorecptors of the stomach, narcotic agents produce changes of the reactivity of the central nervous system. The original reaction of the blood pressure and respiration are changed from pressor to depressor reactions. An acute reduction of the functional stability and inhibition of the vasoconstrictor portion of the vasomotor center produced by these drugs results in an excitation of the vasodilator portion of the vasomotor center, which possesses a higher stability than the vasoconstrictor portion.

COLLECTION OF THESES ON ACHIEVEMENTS IN MEDICAL SCIENCES IN COMMEMORATION OF THE TENTH NATIONAL FOUNDATION DAY OF CHINA (SUPPLEMENT). 20 Aug 62 [155]p. 340 refs. JPRS: 14900.
Order from OTS or SLA $11.50 62-32451

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chaun, v. 2, Peiping, Dec 59, p. 131-137 and 144-206.

DESCRIPTORS: *Arteriosclerosis, *Diseases, *Heart, *Circulatory system, Diagnosis, *Congenital anomalies, *Liver, *Lungs, Physiology, Pathology, *Hematology, *Anemia, *Leukemia, *Chinese traditional medicine, Drugs, Sucrose, *Iron compounds, Oxides, *Endocrine glands, *Diabetes, *Eosinophils, Surgery.

Contents:
A study of atherosclerosis and arteriosclerotic heart disease, by Li Yun-ch'ien
Diagnosis of congenital cardiovascular disease, by Ts'ui Chi chun
Developments in the diagnosis of hepatic diseases, by Huang Ta-you
The research on the examination of lung functioning, by Wu Shao-ch'ing and others
Developments in pathological haematology, by Sung Shao-chang
Research on treatment of aplastic anemia, by Yang Tien-ying
Preparation and clinical application of ferric oxide saccharatum, by Sung Shao-chang and others
The progress of endocrinology
Clinical studies of diabetes mellitus, by Chung Hsueh-li
The research on the variation of count of eosinophil white cell in acute diseases and surgery, by K'uang An-k'un.

COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY; [SELECTED] TRANSLATIONS NO. 6. 17 Sep 62 [75]p. 6 refs. JPRS: 15305.
Order from OTS or SLA $7.60 62-33017

Trans. of Chung Hua Wai K'o Tsa Chih (Chinese People's Republic) 1962, v. 10, no. 2, p. 79-85, 114-117, 126-132 and table of contents.

DESCRIPTORS: *Medical research, Medicine, China, *Medical equipment, Instrumentation, *Blood, Heat exchangers, *Hypothermia, *Blood plasma, Surgical sponges, Surgical instruments, *Heart, *Blood circulation, Surgery, Wounds, Therapy, Pathology, *Military medicine, *Low temperature research, Rheumatism, Valves, Constriction, Blood vessels.

Contents:
Introducing a multi-tube blood heat exchanger, by Shih Mai-hsin and others
An appraisal of the small rotating disc oxygenator for use in deep hypothermia in combination with extracorporeal circulation, by Wen Te-hsing and others

The preparation and application of blood plasma sponge, by Huang Cheng-ta and Ch'en Hua-tung
A summary of the special topic discussions at the heart surgical science informal discussion meeting, by Shih Wai-hsin and others
A summary of the methods of surgical treatment of lesions of the Septum Ventriculorum Cordis, by Lan Hsi-ch'un and others
A summary of information relating to the radical treatment of szu lien cheng, by Lan Hsi-ch'un and others
A summary of information relating to surgical treatment of rheumatic bicuspic valve constriction, by Hou Yu-lin and others
Table of contents. 1962. v. 10, no. 2.

NEWS ON RHEUMATISM IN THE USSR. 31 May 62 [41]p. JPRS: 13940.
Order from OTS or SLA $4.60 62-24995

Trans. of Voprosy Revmatizma (USSR) 1962 [v. 2] no. 1, p. 3-12 and 88-91.

DESCRIPTORS: *Rheumatic diseases, *Joints (Physiology), *Diseases, Control, Scientific reports, Hospitals.

Contents:
On the prospects and tasks concerning the development of Soviet rheumatology, by A. I. Nesterov
The decree of the joint plenum of the All-Union and Ukrainian Committees on the Study of Rheumatism and Joint Diseases and Their Control, Yalta, 14 Oct 61
A list of themes recommended as doctoral dissertations on the problem "rheumatism and joint diseases"
A visit to the rheumatological centers in the German Democratic Republic, by V. N. Dzyak and M. P. Grigor'eva.

PATHOLOGICAL PHYSIOLOGY AND EXPERIMENTAL THERAPY, 1961, VOL. 5, NO. 6: EXCERPTS. 4 Apr 62 [34]p. 49 refs. JPRS: 13342.
Order from OTS or SLA $3.60 62-23826

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1961, v. 5, no. 6, p. 3-4, 21-25, 30-32, 36-39, 62-65.

DESCRIPTORS: *Pathology, *Physiology, *Therapy, *Nervous system, Radiation effects, *Hibernation, Hypothermia, *Decompression sickness, *Radiation sickness, Shock (Pathology), *Body fluids, *Burns, Adhesions

Contents:
Tasks of pathological physiology in our country during the period of large-scale building of Communism
On certain changes occuring within the nervous system of irradiated animals under the effect of interoceptive stimulation, by N. S. Delitsyna
On the effect of hibernation and hypothermia on the course of a hemotransfusion shock under experimental conditions, by K. D. Eristavi and others
The effect of high air-temperature on the emergence of decompression disease, by V. A. Aver'yanov
On the problem of the course of peptone shock in radiation sickness, by I. I. Krivenko
On the characteristics of humoral agents which form under the effect of ionizing radiation, by A. G. Sverdlov
A model of burn cachexia in laboratory animals, by V. I. Storik and others

SOVIET MEDICINE, 1962, VOL. 26, NO. 6: [SELECTED] ARTICLES. 20 Sep 62 [36]p. 5 refs. JPRS: 15369.
Order from OTS or SLA $3.60 62-33146

Trans. of Sovetskaya Meditsina (USSR) 1962, v. 26, no. 6, p. 5-13, 115-118, 145-151.

DESCRIPTORS: *Collagen, Diseases, Tissues (Biology), *Medical examination, Rural areas, Scientific reports, *Biochemistry, *Skin, *Venereal diseases.

Contents:
General morphology of collagen diseases, by A. I. Strukov
Characteristics of mass medical examination of the nomads of Chukot peninsula by means of a "flying dispensary, by A. G. Vol'fson
The International Congress of Biochemists (no. 5) Moscow, Aug 61, by V. M. Kushko
The All-Russian Congress of Dermato-Venerologists (no. 1) Moscow, Dec 61, by B. M. Pashkov.

SOVIET PUBLIC HEALTH SERVICE, 1962, VOL. 21, NO. 6: [SELECTED] ARTICLES. 17 Sep 62 [43]p. 23 refs. JPRS: 15291.
Order from OTS or SLA $4.60 62-33044

Trans. of Sovetskoe Zdravookhranenie (USSR) 1962, v. 21, no. 6, p. 9-14, 25-37, 53-59.

DESCRIPTORS: *Public health, *Tumors, Rural areas, *Cybernetics, *Statistical analysis, Literature, *Age factors, Viability.

Contents:
The international significance of Soviet oncology, by A. N. Novikov
Experience in the reorganization of the rural public health network, by R. E. Shumakher
Medical cybernetics and medical statistics, by L. E. Polyakov
The technological interpretation of biological and social phenomena in foreign cybernetics, by O. V. Perov
On the indices of longevity, by N. N. Sachuk.

TRANSLATIONS ON SOVIET MEDICINE. 14 Sep 62 [39]p. 31 refs. JPRS: 15270.
Order from OTS or SLA $3.60 62-33030

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1962 [v. 17] no. 7, p. 17-22 and 74-82.

DESCRIPTORS: *Genetics, *Medicine, Mutations, Diseases, *Clinical death, *Brain, Pathology.

Contents:
Medical genetics: achievements and problems, by V. P. Efroimson
Mental changes after brief clinical death, by V. V. Kovalev.

TRAUMATIC SHOCK. [SELECTED PARTS].
17 Sep 62 [26]p. JPRS: 15318.
Order from OTS or SLA $2.60 62-33117

Trans. of mono. Travmaticheskii Shok, Leningrad, 1962, p. 5-19, 217-220, 239-240.

DESCRIPTORS: *Traumatic shock, *Shock (Pathology)

Contents:
Major stages in the development of the study of shock, by I. R. Petrov
Complex treatment of shock and terminal stages, by M. G. Shraiber
Table of contents.

Bakulev, A. N. and Kolesnikova, R. S.
STARVATION THERAPY. Preliminary Report.
7 May 62 [12]p. 6 refs. JPRS: 13678.
Order from OTS or SLA $1.60 62-24404

Trans. of Klinicheskaya Meditsina (USSR) 1962, v. 40, no. 2, p. 14-20.

DESCRIPTORS: *Starvation, *Therapy, Diseases, Circulatory system, Pancreas, Gallbladder, Body weight.

Bikalanko, A. P.
THE CONGRESS OF THE CPSU AND THE TASKS OF HEALTH IN MOLDAVIA (NO. 22). 2 Apr 62 [8]p. JPRS: 13272.
Order from OTS or SLA $1.10 62-23764

Trans. of Zdravookhranenie (USSR) 1961, no. 5, p. 3-[7].

DESCRIPTORS: *Public health, Industrial medicine.

Bogovskii, P. and Gavrilov, A.
SCIENTIFIC ONCOLOGICAL RESEARCH AND CANCER CONTROL TASKS IN THE ESTONIAN SSR IN THE LIGHT OF THE PROGRAM OF THE CPSU.
18 Sep 62 [11]p. JPRS: 15321.
Order from OTS or SLA $1.60 62-33052

Trans. of [Zdravookhranenie Sovetskoi Estonii] (USSR) 1962, no. 2, p. 3-7.

DESCRIPTORS: *Tumors, *Cancer, Inhibition, Medical research.

Botvinnikova, M. I.
THE USE OF COPPER-IONTOPHORESIS IN THE TREATMENT OF INFLAMMATORY PROCESSES OF THE LUNGS AND RESPIRATORY TRACT OF CHILDREN. 16 Mar 62 [9]p. 13 refs. JPRS: 13011.
Order from OTS or SLA $1.10 62-23428

Trans. of Pediatriya (USSR) 1961 [v. 40] no. 12, p. 8-11.

DESCRIPTORS: *Therapy, Diseases, Respiratory system, Children, *Copper, *Ionization, Bioelectronics, *Lungs, *Inflammation.

Braun, Volkmar.
LOBELINE FOR CHRONIC NICOTINE ABUSE. [1962]
Order from K-H-$3.75 K-H-10764-b

Trans. of Therapie der Gegenwart (Germany) 1960, v. 99, no. 8, p. 403.

DESCRIPTORS: Alkaloids, *Nicotine, Tobacco, Smokes

Ching, Hsin-chung.
CONTROL OF INFECTIOUS AND PARASITIC DISEASES IN THE CHINESE PEOPLE'S REPUBLIC.
29 Mar 62 [15]p. JPRS: 13235.
Order from OTS or SLA $1.60 62-23760

Trans. from Sovetskoe Zdravookhranenie (USSR) 1962, v. 21, no. 1.

DESCRIPTORS: *Parasitic infections, *Infections, *Diseases, *China. *Public health.

Gerke, A. A.
HYPERTENSIVE DISEASE: PATHOGENESIS, DIAGNOSIS, TREATMENT (Gipertonicheskaya Bolezn': Patogenez, Diagnostika, Lechenie). [1962] [25]p. NIH no. 31.
Order from OTS or SLA $2.60 62-23504

Trans. of Voprosy Patologii Serdechno-Sosudistoi Sistemy (USSR) 1955, v. 4 [no. 5] p. 3-13.

DESCRIPTORS: *Hypertension, Pathology, *Diagnosis, *Therapy, Surgery

Gorodilova, Vera Vladimirovna.
A SPECIFIC ANTIGEN OF HUMAN BREAST CANCER AND ITS SIGNIFICANCE IN THE ETIOLOGY OF THIS TUMOR, CHAPS. III, VI AND TABLE OF CONTENTS. 21 Sep 62 [69]p. JPRS: 15383.
Order from OTS or SLA $6.60 62-33142

Trans. of mono. Spetsificheskii Antigen Raka Molochnykh Zhelez i Ego Znachenie v Etiologii Dannoi Opukholi, Moscow, 1961, p. 60-102, 136-152, 202.

DESCRIPTORS: *Cancer, *Mammary glands, Antigens, Etiology, Blood, *Diagnosis, *Leukemia.

Contents:
A specific antigen of human breast cancer
A specific component in the blood of patients with blood cancer
Table of contents.

Grombakh, S. M.
PROBLEMS OF THE HYGIENE OF CHILDREN AND ADOLESCENTS IN CONNECTION WITH REORGANIZATION OF THE SCHOOL. 29 Mar 62 [9]p. JPRS: 13247.
Order from OTS or SLA $1.10 62-23757

Trans. of Sovetskaya Meditsina (USSR) 1961 [v. 25] no. 9, p. 139-142.

DESCRIPTORS: *Public health, *Students, *Children

Grosse, H.
IS THE INCREASE OF LUNG CANCER COMPENSATED BY A DECREASE OF OTHER FORMS OF TUMOR? [1962] 13p.
Order from K-H $16.25 K-H 6713-a

Trans. of Zeitschrift für die Gesamte Innere Medizin und ihre Grenzgebiete (East Germany) 1957, v. 12, no. 3, p. 131-134.

DESCRIPTORS: *Cancer, *Lungs, Tumors.

Guerin, M. and Cuzin, J. L.
CANCEROGENIC ACTION OF TAR FROM TOBACCO SMOKE ON THE SKIN OF THE MOUSE. [1962] 20p.
Order from K-H $36.25 K-H 8342-a

Trans. of Association Française pour l'Étude du Cancer. Bulletin, 1957, v. 44, no. 3, p. 387-408.

DESCRIPTORS: *Cancer, *Skin, Mice, *Tobacco, Smokes, *Tars.

Guerin, M.
PULMONARY TUMORS AND BUCCAL CANCER IN RATS SUBJECTED TO INHALATION OF CIGARETTE SMOKE. [1962] 24p.
Order from K-H $30.00 K-H 9728

Trans. of Ass[ociation] Fr[ançaise pour l'Étude du] Cancer. Bull[etin] 1959, v. 46, Apr/June, p. 295-309

DESCRIPTORS: *Tumors, Lungs, *Cancer, Mouth, Rats, *Cigarettes, Smokes.

Hackensellner, H. A.
THE BEHAVIOR OF THE BRONCHIAL MUCOSA IN LUNG CANCER. I. RELATIONS BETWEEN BRONCHIAL CARCINOMA, EPITHELIAL METAPLASIA, AND SMOKING. [1962] 43p.
Order from K-H $53.75 K-H 6821-b

Trans. of Frankfurter Zeitschrift für Pathologie (West Germany) 1957, v. 68, no. 4, p. 361-382.

DESCRIPTORS: *Lungs, *Cancer, *Cigarettes, Smokes, Skin, Mucous membranes.

Haintz, Odon.
PULMONARY TUMORS. [1962] 15p.
Order from K-H $18.75 K-H 9641

Trans. of Orvosi Hetilap (Hungary) 1934, v. 78, no. 30, p. 684-687.

DESCRIPTORS: *Lungs, *Tumors.

Hanser, R. and Simon, L.
CARCINOMA BASED ON CHRONIC ARSENIC POISONING. [1962] 32p.
Order from K-H $40.00 K-H 3510-a

Trans. of Zeitschrift für Krebsforschung (Germany) 1941, v. 51, p. 305-321.

DESCRIPTORS: *Cancer, *Arsenic, Poisoning.

Herbich, J. and Neuhold, R.
FREQUENCY AND DISTRIBUTION OF BRONCHIAL CARCINOMA IN AUSTRIA. [1962] 20p.
Order from K-H $62.50 K-H 4020-b

Trans. of Zeitschrift für Krebsforschung (West Germany) 1954, v. 60, no. 2, p. 139-161.

DESCRIPTORS: *Lungs, *Cancer, Austria.

Holsti, Lars R. and Ermala, Pentti.
TOBACCO AND CANCER. II. CLINICAL AND PATHOLOGICAL MATERIAL. [1962] 29p.
Order from K-H $36.25 K-H 5223-a

Trans. of Duodecim (Finland) 1955, v. 71, no. 11, p. 1115-1134.

DESCRIPTORS: *Tobacco, *Cancer, Smokes, Cigarettes.

Koerbler, J., Frank, P., and Turner, V.
MALIGNANT TRANSPLANTABLE TUMORS AND LUKEMIAS IN MICE INDUCED BY FLAX FIBERS AND CIGARETTE PAPER. [1962] 23p.
Order from K-H $28.75 K-H 3932

Trans. from Veterinarski Arhiv (Yugoslavia) [1953] v. 23, no. 7/8.

DESCRIPTORS: *Tumors, *Leukemia, Mice, *Flax, *Cigarettes, Paper.

Kopczynska, J.
NATIONAL CONFERENCE ON SCHOOL HYGIENE. 19 Feb 62 [5]p. JPRS: 12564.
Order from OTS or SLA $1.10 62-19166

Trans. of Pediatria Polska, 1960, v. 35, no. 8, p. 933-934.

DESCRIPTORS: *Conferences, *Public health, Students, Education

Latmanizova, L. V.
PHYSIOLOGICAL MECHANISMS OF MALIGNANT TUMOR GROWTH: CONCLUSIONS AND TABLE OF CONTENTS. 13 Sep 62 [22]p. JPRS: 15260.
Order from OTS or SLA $2.60 62-33041

Trans. of mono. Fiziologicheskie Mekhanizmy Zlokachestvennogo Opukhelevogo Rosta, Moscow, 1962, p. 63-72 and 79.

DESCRIPTORS: *Tumors, Growth, Tissues (Biology)

Laufberger, Vilem.
BIOGRAPHIC INFORMATION ON DR. JOSEF HEPNER. 27 July 62 [9]p. JPRS: 14615.
Order from OTS or SLA $1.10 62-32067

Trans. of Casopis Lekaru Ceskych (Czechoslovakia) 1962, v. 101, no. 24/25, p. 738-739.

DESCRIPTORS: *Pathology, Physiology, *Medical personnel.

Lupu, N. Gh. and Velican, C.
THE BIOLOGY OF THE SCLEROTIC PROCESS. III. EXPERIMENTAL INVESTIGATIONS CONCERNING THE ROLE OF CHRONIC SMOKING. [1962] 25p.
Order from K-H $31.25 K-H 11548-d

Trans. of [Academia Republicii Populare Romine. Institutul de Medicina Internal]. Studii [si]Cercet[ari de] Med[icina] Intern[a] 1961, v. 2, p. 237-250.

DESCRIPTORS: *Arteriosclerosis, Smokes, Tobacco, *Cigarettes.

Marmur, R. K.
THE EFFECT OF THE REMOVAL OF THE SYMPATHETIC GANGLIA OF THE NECK AND OF THE INTRODUCTION OF NICOTINE ON THE CHANGES OF HEMODYNAMICS AND RESPIRATION IN EMBOLUS OF THE BRAIN. [1962] 9p.
Order from K-H $11.25 K-H 8043-b

Trans. of Arkhiv Patologii (USSR) 1957, v. 19, no. 7, p. 18-23.

DESCRIPTORS: *Excision, *Ganglia, *Autonomic nervous system, *Neck, Nicotine, *Blood circulation, *Respiration, Embolism, *Brain.

Maslova, K. K.
THE INFLUENCE OF NICOTINE ON EXPERIMENTAL ATHEROSCLEROSIS. [1962] 9p.
Order from K-H $11.25 K-H 6012-b

Trans. of #Byulleten' Eksperimental'noi Biologii i Med[itsiny] (USSR) 1956 [v. 40] no. 1, p. 20-23.

DESCRIPTORS: *Nicotine, *Arteriosclerosis.

Masnatta, G.
TOBACCO, RESPIRATORY PATHOLOGY AND BRONCHIAL CANCER. [1962] 9p.
Order from K-H $11.25 K-H 8133-a

Trans. of la Prensa Medica Argentina, 1957, v. 44, no. 30, p. 2368-2371.

DESCRIPTORS: *Tobacco, Smokes, Cigarettes, Nicotine, *Respiratory system, Pathology, *Cancer.

Michailow, W. and Raitschew, R.
CHANGES IN THE MUCOSA OF THE LARYNX UNDER THE INFLUENCE OF THE SMOKING OF TOBACCO. [1962] 9p.
Order from K-H $11.25 K-H 8500-d

Trans. of Strahlentherapie (West Germany) 1958, v. 105, no. 1 [p. 39-44].

DESCRIPTORS: *Larynx, Mucous membranes, *Cigarettes, Smokes, *Tobacco.

Monasterio, G.
A SERIOUS DANGER TO HEALTH: TABAGISM. [1962].
Order from K-H $30.00 K-H 10764-c

Trans. of Riforma Medica (Italy) 1960, v. 74, p. 35, 989 and 996.

DESCRIPTORS: *Smokes, *Cigarettes, Toxicity, Tobacco.

Montoreano, Felix and Rabenko, Jose.
BALLISTOCARDIOGRAPHIC CONTROL OF SENSIBILITY TO TOBACCO IN CANCER OF THE LUNG PATIENTS OF ADVANCED AGE. [1962] 10p.
Order from K-H $12.50 K-H 8619-f

Trans. of[Asociación Médica Argentina, Buenos Aires. Revista] 1957, v. 71, no. 7, p. 208-212.

DESCRIPTORS: *Ballistocardiography, Sensitivity, *Tobacco, *Cancer, *Lungs.

Neukomm, S.
EXPERIMENTAL STUDIES ON THE CARCINOGENIC POWER OF TOBACCO SMOKE AND OTHER ATMOSPHERIC POLLUTIONS. [1962] 33p.
Order from K-H $41.25 K-H-6251-b

Trans. of Oncologia (Switzerland) 1957, v. 10, no. 2, p. 137-156.

DESCRIPTORS: *Cancer, *Tobacco, *Smokes, Cigarettes, Atmosphere, Contamination.

Neukomm, S.
INVESTIGATION OF THE IMPORTANCE OF AIR POLLUTION AND PARTICULARLY TOBACCO SMOKE IN THE ETIOLOGY OF CANCER OF THE LUNGS. Feb 61, 5016 words.
Order from K-H $23.75 K-H 10573-c

Trans. of Oncologia (Switzerland) 1960, v. 13, no. 2, p. 252-266.

DESCRIPTORS: *Cancer, *Lungs, *Tobacco, Smokes, *Air, Contamination.

Neukomm, S.
A SENSITIVE AND ULTRARAPID TEST OF THE CANCEROGENIC POWER OF CERTAIN CHEMICAL SUBSTANCES. [1962] 17p.
Order from K-H $21.25 K-H-6609-b

Trans. of Oncologia (Switzerland) 1957, v. 10, no. 2, p. 107-119.

DESCRIPTORS: Tests, Detection, *Cancer, Etiology, *Chemicals.

Perchikova, G. E.
SCIENTIFIC SESSION OF THE INSTITUTE OF THERAPY OF THE ACAD. MED. SCI. USSR (NO. 12). 5 Mar 62 [13]p. JPRS: 12794.
Order from OTS or SLA $1.60 62-19808

Trans. of Kardiologiya (USSR) 1961 [v. 1] no. 3, p. 88-92.

DESCRIPTORS: *Therapy, *Hypertension, *Arteriosclerosis, *Heart, Pathology.

Pietzsch, A.
THE DETECTION OF CARCINOGENIC HYDROCARBONS IN TOBACCO SMOKE. [1962] 16p.
Order from K-H $20.00 K-H 9856-c

Trans. of die Pharmazie (Germany) 1959, v. 14, no. 8, p. 466-473.

DESCRIPTORS: *Cancer, *Hydrocarbons, *Tobacco, Smokes, Detection (Chemical)

Pietzsch, A.
ON THE IDENTIFICATION OF CANCEROGENOUS HYDROCARBONS IN TOBACCO SMOKE. [1962] 3p.
Order from K-H $4.75 K-H 9621

Trans. of die Naturwissenschaften (West Germany) 1958, v. 45, p. 445.

DESCRIPTORS: *Cancer, *Hydrocarbons, *Tobacco, Smokes.

Pietzsch, A.
THE PAPER CHROMATOGRAPHY OF CANCEROGENIC HYDROCARBONS. [1962] 21p.
Order from K-H $26.25 K-H 9353-c

Trans. of die Pharmazie (Germany) 1957, v. 12, no. 1, p. 24-30.

DESCRIPTORS: *Paper chromatography, *Cancer, *Hydrocarbons.

Poumailloux, Marcel and Crouzat, Jean.
THE SOCIAL DANGER OF TOBACCOISM. [1962] 11p.
Order from K-H $13.75 K-H 5525-d

Trans. of la Presse Médicale (France) 1956 [v. 64] no. 47, p. 1097-1098.

DESCRIPTORS: *Tobacco, Smokes, Cigarettes, *Toxicity.

Sachkov, V. I.
IMMUNOLOGICAL METHODS OF THE STUDY OF RHEUMATISM AND OTHER COLLAGEN DISEASES: CONCLUSION. 7 Sep 62 [8]p. JPRS: 15151.
Order from OTS or SLA $1.10 62-32883

Trans. of mono. Immunologicheskie Metody Izucheniya Revmatizma i Drugikh Kollagenovykh Boleznei, Moscow, 1962, p. 178-182.

DESCRIPTORS: *Immunology, *Rheumatism, Rheumatic fever, Arthritis, *Collagen, *Diseases.

Saltykov, R. A., Zemskov, E. M., and Milyutin, V. N.
THE ACTION OF TOXINS OF PATHOGENIC ANAEROBES ON TISSUE CULTURES. 14 Mar 62 [7]p. (1 fig. omitted) 6 refs. JPRS: 12941.
Order from OTS orSLA $1.10 62-23392

Trans. of #Byulleten' Eksperimental'noi Biologii i Meditsiny (USSR) 1961 [v. 52] no. 12, p. 43-46.

DESCRIPTORS: *Bacterial toxins, *Anaerobiology, Culture media, Tissues (Biology), Cytochemistry.

A study was made of the cytotoxic action of the toxins of various pathogenic anaerobes - Cl. tetani, Cl. botulinum, Cl. perfringens, Cl. oedematiens, Cl. septicum, and Cl. histolyticum - on tissue cultures. Six kinds of tissue cultures were used in the experiments: the cell strains HeLa, HLS, Detroit-6, monkey heart fibroblasts, human embryonic muscle tissue, and initially trypsinized tissues of 11-day old chick embryos. The toxin of Cl. perfringens breaks the connections between the cells. They become round and their contours more distinct. The movement of cytoplasm gradually ceases. Some of the cells are destroyed while the others mass together in amorphous conglomerates. The toxin of Cl. oedematiens likewise disrupts the cells and the connections between them, but it is characterized by intense movement of the cytoplasm which "boils" just before the cells die "in agony." The final picture of their death is like the above. The toxin of Cl. septicum destroys the tissue in a peculiar way. The disruptive process initiated between the cell connections is soon halted and the cells become motionless as though fixed even before the onset of sharp destructive changes. The cells then wrinkle and lose their normal configuration. At the end the masses of dead cells form so-called cell detritus. The toxin of Cl. histolyticum is similar in action to the toxin of Cl. perfringens except that it destroys the cells more rapidly.

Schmahl, D. and Reiter, A.
TESTS OF CARCINOGENIC PROPERTIES OF SMOKED PRODUCTS. [1962] 9p.
Order from K-H $11.25 K-H-3199-d

Trans. of Z[eitschrift für] Krebsforschung (West Germany) 1953, v. 59, no. 4, p. 397-401.

DESCRIPTORS: *Tobacco, Toxicity, *Cancer, Tests.

Shabad, L. M. and Finkel', I. I.
EXPERIMENTAL CANCER OF THE LUNGS [AND] IMMUNOMORPHOLOGY OF CERTAIN ENDOCRINE GLANDS. 29 Aug 62 [30]p. 60 refs. JPRS: 15044.
Order from OTS or SLA $2.60 62-32670

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 6, p. 3-12 and 53-60.

DESCRIPTORS: *Cancer, *Lungs, Test methods, Benzopyrene, *Endocrine glands, Pituitary gland, Adrenal glands, Thyroid gland, Morphology, *Tularemia, *Immunology.

During the process of the development of immunity in guinea pigs, vaccinated with an antitularemia vaccine, morphological changes in the hypophysis, adrenals, and thyroid generally reflected an increase of secretory activity, and developed simultaneously with the hyperplastic process in the lymphoid organs. The synergetic correlation between lymphoid tissue and the adrenal cortex and between the latter and the thyroid observed during the development of post-vaccinal immunity, corresponds to the "resistance" reaction of Selye general adaptation syndrome, as contrasted to the "alarm" reaction of GAS which is characterized by an antagonistic correlation between the above-indicated organs and by a reduction of immunity. Changes in the endocrine may serve as indicators of the resistance or reactivity of the organism. The process of development of antibodies represents a good model for the study of adaptation and compensation phenomena, because it permits a dosed effect and observation of the extent of adaptation according to the level of antibodies titer. The aggregate of changes taking place in the structure of endocrine glands during the immunization process can be characterized as a general endocrine immunomorphological complex. (Author)

Shakhnovskii, L. N.
"FREE" NICOTINE. [1962] 12p.
Order from K-H $15.00 K-H 3160(1)

Trans. of Tabak (USSR) 1953, v. 14, no. 5, p. 26-29.

DESCRIPTORS: *Nicotine.

Shilov, P. I. and Pilyushin, P. V.
GENERAL INFORMATION ON THERMAL BURNS AND BURN DISEASE. 19 Sep 62 [26]p. 1 ref. JPRS: 15339.
Order from OTS or SLA $2.60 62-33112

Trans. of mono. Vnutrennaya Patologiya pri Ozhogakh (Internal Pathology in Burns) Leningrad, 1962, chap. 1, p. 5-19.

DESCRIPTORS: *Burns, *Diseases

Timofeevskii, A. D.
ROLE OF VIRUSES IN THE ORIGIN OF TUMORS: CONCLUSION. 17 Sep 62 [26]p. JPRS: 15311.
Order from OTS or SLA $2.60 62-33021

Trans. of mono. Rol'virusov v Vozniknovenii Opukholei, Moscow. 1961, p. 138-164.

DESCRIPTORS: *Tumors, *Viruses.

Toneva, V.
NONVIRULENT STRAINS OF AUJESZKY VIRUS OBTAINED BY PASSAGE THROUGH PIGEONS. 21 Feb 62 [6]p. JPRS: 12607.
Order from OTS or SLA $1.10 62-19784

Trans. of Bulgarska Akademiya na Naukite. Doklady, 1961, v. 14, no. 2, p. 167-[170].

DESCRIPTORS: Immunology, *Virus diseases, Animals, *Mutations, *Virus vaccines, Pigeons.

In order to distinquish this new pigeon-adapted Aujeszky virus strain from the parent strain, we have named it "strain No 80-G". It is the first Aujeszky virus strain obtained which is nonvirulent on animals spontaneously susceptible to the disease. It forms an antibody in rabbits and establishes--upon challenge--solid immunity in mice. These properties of the newly obtained strain warrant the belief that it can be successfully utilized as a nonvirulent live vaccine against the Aujeszky disease. (Extracted)

Umarova, S. U.
THE FREQUENCY AND SEASONAL DISTRIBUTION OF LATE TOXEMIA OF PREGNANCY UNDER THE CLIMATIC AND GEOGRAPHIC CONDITIONS OBTAINING IN THE DRY SUBTROPICS. 15 June 62 [5]p. JPRS: 14120.
Order from OTS or SLA $1.10 62-25164

Trans. of Zdravookhranenie Tadzhikistana (USSR) 1962, v. 9, no. 1, p. 30-32.

DESCRIPTORS: *Pregnancy, *Uremia, Climatic factors, Geography, *Tropical regions.

According to the data of the maternity homes of the city of Dushanbe, the over-all incidence of exlampsia is 0.21%, while the incidence of late toxemia (without eclampsia) is 2.23%. Under the climatic and geographic conditions which obtain in the dry subtropics, late toxemia of pregnancy (especially eclampsia) is encountered somewhat less frequently than in regions with a temperate or cold climate. A seasonal factor is seen in the distribution of the incidence of late toxemia of pregnancy; eclampsia is most frequently encountered between November and February (63.5%), while the incidence of late toxemia of pregnancy without eclampsia is highest between December and May (71.5%). (Author)

Uspenskii, Evgenii Aleksandrovich.
CHANGES OF THE NERVOUS SYSTEM IN CANCER: CONCLUSIONS [AND] TABLE OF CONTENTS. 5 Sep 62 [8]p. JPRS: 15125.
Order from OTS or SLA $1.10. 62-32706

Partial trans. of mono. Izmeneniya Nervnoi Sistemy pri Rake, Kiev, 1961, p. 171-173 and 189.

DESCRIPTORS: *Nervous system, *Cancer

Venglinskaya, E. A.
THE EFFECT OF CORTISONE ON THE DEVEOPMENT OF PROCESSES OF EXUDATION AND EMIGRATION IN CHEMICAL AND THERMAL EXPERIMENTAL INFLAMMATION. 7 Sep 62 [7]p. 23 refs. JPRS: 15161.
Order from OTS or SLA $1.10 62-32851

Trans. of Problemy Endokrinologii i Gormonoterapii (USSR) 1962, v. 8, no. 3, p. 11-14.

DESCRIPTORS: Drugs, *Adrenal cortical extract, Healing, *Edema, *Inflammation, *Leukocytes, *Burns, Chemicals, Injuries.

Intramuscular induction of cortisone (10 mg/kg) into rabbits 4 hours prior to the action of xylol significantly retards the development of exudation and emigration processes in the focus of the inflammation. Induction (10 mg/kg) of cortisone 4 hours prior to the action of high temperature (54°) on the skin does not produce a counter-inflammatory action. Induction (15 mg/kg) of cortisone 4 hours, and immediately, before the action of heat (54°) has no influence on the development of exudation and emigration in the focus of infection, but causes more severe disturbances in the morphology of tissue structures. (Author)

Venulet, Franciszek and Majcherski, Tadeusz.
DISTURBANCES IN THE FUNCTIONS OF THE SUPRARENAL GLAND UNDER THE INFLUENCE OF TOBACCO SMOKE. [1962] 7p.
Order from K-H $8.75 K-H-3596-b

Trans. of Polski Tygodnik Lekarski, 1955, v. 10, no. 1, p. 6-7.

DESCRIPTORS: *Tobacco, Cigarettes, *Adrenal glands, Secretion.

Venelut, Francis and Danysz, Andrew.
THE INFLUENCE OF TOBACCO SMOKING ON THE LEVEL OF VITAMIN C IN HUMAN MILK. [1962] 10p.
Order from K-H $12.50 K-H-5409-b

Trans. of Pediatria Polska, 1955, v. 30, no. 9, p. 811-817.

DESCRIPTORS: *Tobacco, Cigarettes, *Ascorbic acid, *Milk.

ACHIEVEMENTS IN THE USSR DRUG INDUSTRY. 23 Feb 62 [15]p. JPRS: 12742.
Order from OTS or SLA $1.60 62-23335

Trans. of Aptechnoe Delo (USSR) 1961, v. 10, no. 3, p. 3-13.

DESCRIPTORS: *Drugs, Manufacturing methods, Pharmacology, *Economics

Contents:
USSR drug economy during 1959-60, by A. M. Stetsyuk
Certain aspects of drug supply, by Z. M. Mashnevich
Drug business by the 40th anniversary of Soviet power in Georgia, by O. A. Nishniyanidze and I. S. Tabagari

PHARMACEUTICAL AFFAIRS, 1961, VOL. 10, NO. 3: [SELECTED TRANSLATIONS]. 27 June 62 [31]p. JPRS: 14293.
Order from OTS or SLA $3.60 62-25527

Trans. of Aptechnoe Delo (USSR) 1961, v. 10, no. 3, p. 3-13.
Another trans. is available from OTS or SLA $1.60 as 62-23335, JPRS-12742, 23 Feb 62 [15]p.

DESCRIPTORS: *Pharmacology, *Drugs, Economics, *Medical supplies.

Contents:
The first two years of the seven-year plan for the pharmaceutical economy of the RSFSR, by A. M. Stetsyuk
Certain prospects in medical supplies, by Z. M. Mashnevich
Pharmacy at the 40th Anniversary of the Establishment of Soviet Power in Georgia, by O. A. Nishnyanidze and I. S. Tabagari.

TOXIC AGENTS. 1 Mar 62 [29]p. 19 refs. JPRS: 12749.
Order from OTS or SLA $2.60 62-23344

Trans. of Bol'shaya Meditsinskaya Entsiklopediya (USSR) 1961, v. 22, p. 806-829.

DESCRIPTORS: *Chemical warfare agents. Aerosols, Gases, Chemical warfare injuries, Therapy, Diagnosis.

Danysz, A. and Skupinski, S.
THE INFLUENCE OF NICOTINE AND CIGARETTE PAPER SMOKE ON THE LEVEL OF NICOTINE IN FROG ORGANS AND MOUSE URINE. [1962] 4p.
Order from K-H $5.00 K-H 12057-a

Trans. of Przeglad Lekarski (Poland) 1955 [ser. 2, v. 11] no. 10, p. 314-315.

DESCRIPTORS: *Nicotine, Cigarettes, Paper, *Smokes, *Urine, Mice, Frogs, Tissues (Biology).

Hecht, G., Junkmann, K. and others.
PHARMACOLOGY OF 2-SULFANILAMIDO-5-METHOXY-PYRIMIDINE. [1962] 17p. (figs. tables refs. omitted).
Order from SLA $1.60 62-16218

Trans. of Arzneimittel-Forschung (West Germany) 1961, v. 11, no. 8, p. 695-700.
Another trans. is available from SLA $1.60 as 62-14096 [1961] 18p. 14 refs.

DESCRIPTORS: Pharmacology, *Sulfonamides, Dosage, Therapy, *Alkoxy radicals, *Pryimidines, *Excretion, *Toxicity.

For abstract see Technical Translations 7: 861, 1962.

Herrmann, K.
CAFFEIC ACID AND CHLOROGENIC ACID. [1962] 42p.
Order from K-H $52.50 K-H 8480

Trans. of die Pharmazie (Germany) 1956, v. 11, [no. 1] p. 1-12.

DESCRIPTORS: *Organic acids, *Plants, *Caffeic acid, *Chlorogenic acid.

Lazarev, N. V., ed.
HANDBOOK OF PHARMACOLOGY, VOLS. 1-2: AUTHOR'S PAGE, FOREWARD, CONTENTS.
1 June 62 [27]p. JPRS: 14041.
Order from OTS or SLA $2.60 62-25056

Trans. of mono. Rukovodstvo po Farmakologii, v. 1, Leningrad, 1961, p. 2-5, 607-611 and v. 2, Leningrad, 1961, p. 501-504.

DESCRIPTORS: *Pharmacology, Handbooks.

Lohs, Karlheinz.
SYNTHETIC POISONS. 20 Aug 62 [181]p. 25 refs.
JPRS: 14891.
Order from OTS or SLA $12.50 62-32454

Trans. of mono. Synthetische Gifte, East Berlin, 1958, 212p.

DESCRIPTORS: Chemical warfare agents, *Poisons, Physical properties, Chemical properties, *Toxicity, Atomic structure, *Lachrymators, *Phosgene, *Arsenic compounds, *Sulphides, Sulfur compounds, Amines, *Halogen compounds, *Oximes, *Vesicants, Therapy, *Hydrocyanic acids, Hydrides, Carbonyl radicals, *Metalorganic compounds, Ethyl radicals, *Lead compounds, *Fluorocarbons, *Phosphoric acids, Esters, *Fluorides, *Phosphates, *Nitrophenols, Methyl radical, *Cyano radicals, Pinacolines

Martinez, Matias and Salas, Eduardo A.
CONTRIBUTION TO THE STUDY OF 5-(o-METHOXYPHENOXY)-2-OXAZOLIDONE. [1962] 5p. 11 refs.
Order from SLA $1.10 62-14351

Trans. of Sem[ana] Méd[ica] (Argentina) 1960, v. 116, [no. 16] p. 466-468.

DESCRIPTORS: Drugs, *Oxazolidones, *Tranquilizing drugs, *Psychoses, *Mental diseases, Toxicity, Dosage, Methyl radicals, Alkoxy radicals, Phenoxy radicals, Azoles.

The therapeutic effects obtained with methoxyphenoxy-oxazolidone in psychoneurotic and psychotic patients, confirms the efficiency of this new drug synthesized in our country by the group of investigators headed by Fischer and Szabo'. This new synthetic substance has proven itself completely harmless not only in experimental animals, but also clinically, even though in some cases this drug was administered in doses above the average. (Author)

Milletti, Mario and Bianchini, Enzo.
THE TOXICOLOGY OF CIGARETTE SMOKE AND THE DEFENSE ACTION OF FILTERS. [1962] 10p.
Order from K-H $12.50 K-H 6124-b

Trans. of Chimica, Milan (Italy) 1956, v. 12, p. 511-513.
Another trans. is available from SLA mi$1.80, ph$1.80 as 59-10332 [1958] [3]p.

DESCRIPTORS: *Toxicity, *Cigarettes, *Smokes, *Tobacco, Inhibition, Particulate filters.

Otto, Hellmut.
CITRIC ACID EXCRETION IN THE URINE AFTER ADMINISTERING N-(4-METHYL-BENZENE-SULFONYL)-N'-BUTYL CARBAMIDE (D 860). [1962] 2p. 4 refs.
Order from SLA $1.10 62-14935

Trans. of die Naturwissenschaften (West Germany) 1957, v. 44 [no. 1] p. 12.

DESCRIPTORS: *Citric acid, *Excretion, Urine, Drugs, *Diabetes, Nephritis.

Pares, J. and Langer, M.
NOTE CONCERNING 5-(O-METHOXYPHENOXY-METHYL)-2-OXAZOLIDONE OR MEPHENOXALONE. [1961] 3p. 7 refs.
Order from SLA $1.10 62-10051

Trans. of Helvetica Chimica Acta (Switzerland) 1960, v. 43, p. 1862-1863.

DESCRIPTORS: Drugs, *Oxazolidones, Methyl radicals, Alkaxy radicals, Phenoxy radicals, Azoles, Ethyl radicals, Urethanes, Urea.

The synthesis of 5-(o-methoxyphenoxymethyl)-2-oxazolidone (mephenoxalone) by condensation of 3-(o-methoxyphenoxy)-1,2-propanediol with ethyl chlorocarbonate, followed by cyclization, is described. (Author)

Schaumann, Wolfgang.
PHARMACOLOGICAL INFLUENCING OF THE STIMULATION CONDUCTION ALONG THE INTESTINE. June 60, 11p.
Order from K-H $13.75 K-H 10091

Trans. of Naunyn-Schmiedeberg's Archiv für Exper[imentelle] Path[ologie] und Pharmakol[ogie] (West Germany) 1956, v. 229, p. 432-440.

DESCRIPTORS: *Drugs, Stimulation, *Nerves, *Intestine.

Szabo, Gyorgy and Magyar, Zsuzsa.
THE EFFECT OF DIBENAMINE ON HISTAMINE SHOCK. 2 Feb 62 [25]p. JPRS: 12265.
Order from OTS or SLA $2.60 62-19612

Trans. of Magyar Tudomanyos Akademiya Biologiai es Orvosi Tudomanyok Osztalyanak Kozlemenyei (Hungary) 1961, v. 12, no. 3, p. 271-284.

DESCRIPTORS: Drugs, *Vasomotor drugs, *Histamines, *Shock (Pathology), Blood circulation, Capillaries, Permeability.

Dibenamine counteracts the hemoconcentration and decrease in the volume of circulating plasma caused by histamine shock. This may be explained by its effect on capillary hemodynamics and perhaps also on capillary permeability. Dibenamine by itself causes hemodilution and increases the volume of circulating plasma, speeds up the flow of lymph; on the other hand it rather lowers the rate of equilibration between extra- and intravascular proteins. The effect of dibenamine in histamine shock cannot be the result solely of the combination of the effects of the two drugs nor of pharmacological antagonism, since dibenamine prevents neither the formation of the so-called "liver vein lock" caused by histamine nor the decrease in arterial pressure. By contrast, in animals pretreated with dibenamine, histamine hardly increases the rate of lymph flow in the ductus theracicus, and the characteristic effect of histamine, causing an increase in outward passage of proteins, is absent. (Author)

Turkevich, Nikolai Mikhailovich.
CHEMISTRY OF NEW HYPOTENSIVE AGENTS. 31 July 62 [243]p. 758 refs. JPRS: 14670.
Order from OTS or SLA $16.00 62-32195

Trans. of mono. Khimiya Novykh Gipotensivnykh Sredstv, Kiev, 1961, 207p.

DESCRIPTORS: *Hypotension, Therapy, Drugs, Chemotherapeutic agents.

Venulet, F. and Danysz, A.
INFLUENCE OF TOBACCO SMOKE ON ASCORBIC ACID (VITAMIN C) CONTENT IN MOTHER'S MILK. [1962] 1p.
Order from K-H $1.25 K-H 3759-d

Trans. of Acta Physiologica Polonica, 1954, v. 4, no. 4, p. 646.

DESCRIPTORS: *Tobacco, Smokes, Nicotine, Cigarettes, *Ascorbic acid, *Milk.

Vinkler, Elemer, Dirner, Zoltan and others.
A CHEMICAL AND PHARMACOLOGICAL STUDY OF ARYL-BENZO-(e)-1,3-THIAZINE DERIVATIVES, PTS. I - II. 8 Dec 61 [15]p. JPRS: 11427.
Order from OTS or SLA $1.60 62-19677

Partial trans. (part summary) of Acta Pharmaceutica [Hungarica] 1961, v. 31, no. 2, p. 75-82; no. 3, p. 128-132.

DESCRIPTORS: *Thiazines, Drugs, Pharmacology, Nicotinic acids, Amides, *Nervous system, *Paralysis.

Benzothiazine derivatives and nicotinamide-thioethers prepared by the opening up of the heterocyclic ring, synthesized by Vinkler and Szabo, exert a paralytic action on the higher nerve centers while leaving spinal activity relatively intact. This effect, reminiscent of tranquilizers is shown most prominently by 2-(4'-carboxyphenyl)-6,7-dimethoxybenzo-(e)-1,3-thiazine, which also possesses considerable blood pressure lowering properties and antihistaminic activity in vivo. In contrast, 2-(3'-aminophenyl)-6,7-dimethoxybenzo-(e)-1,3-thiazine is characterized by antispasmodic activity similar to that of papaverine. (Author)

Radiobiology

MEDICAL RADIOLOGY, 1962, VOL. 7, NO. 6: SELECTED ARTICLES. 7 Sep 62 [50]p. 72 refs. JPRS: 15173.
Order from OTS or SLA $4.60 62-32862

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 6, p. 32-36, 58-76, 80-87.

DESCRIPTORS: *Radiobiology, *Labeled substances, *Gold, Colloids, Therapy, Cancer, *Radiochemistry laboratories, Hypotension, *Radiation sickness.

Contents:
Comparative study of the distribution of radioactive colloidal gold and of radioactive colloidal gold coated with stable silver in intra-abdominal administration, by M. A. Volkova and I. G. Ashikhmana
A rational system for designing a department and protective measures for working with covered radioactive preparations, by I. G. Lagunova and others
Hypotension and vasoconstriction in acute radiation sickness, by K.B. Tikhonov
Physical bases of electron therapy, by V. A. Petrov.

Aliev, B. M., Domshlak, M. P. and others.
INTEGRAL ABSORBED DOSE IN THE GONADS REGION DURING ROENTGENOLOGICAL INVESTIGATIONS OF THE LUNGS AND THE STOMACH [AND] REMOTE OBSERVATIONS CARRIED OUT ON PERSONS HAVING UNDERGONE RADIATION THERAPY. 28 Mar 62 [27]p. 32 refs. JPRS: 13270.
Order from OTS or SLA $2.60 62-23775

Trans. of #Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 1, p. 10-15 and 53-62.

DESCRIPTORS: Absorption, *X-rays, Diagnosis, Pathology, Lungs, Stomach, *Sex glands, Therapy, Testes.

During X-ray investigations of the organs of the thoracic and abdominal cavities the region of the gonads receives a significant dose of radiation. The gonads-absorbed energy during roentgenoscopy of the

lungs is significantly less than in roentgenoscopy of the stomach, however in both these cases the female gonads receive an 8 to 10 times greater dose than do the male. During filming the value of the gonads dose is substantially less than in roentgenoscopy (according to our data 1/12 to 1/14 as much). In investigation of the lungs and the stomach increased skin-focus distance of from 40 to 60 cm (other conditions being equal) increases the dose absorbed in the gonads region by approximately 2 1/2 to 3 times. (Author)

Belousov, I. M. and Shtukkenberg, Yu. M.
TOTAL TISSUE DOSES FROM THE ACTION OF ALL NATURAL SOURCES OF RADIATION.
28 Feb 62 [8]p. JPRS: 12728.
Order from OTS or SLA $1.10 62-23329

Trans. of mono. Estestvennaya Radioaktivnost' (Natural Radioactivity) Moscow, 1961, chap. 16, p. 186-191.

DESCRIPTORS: *Radiological dosage, *Soils, *Atmosphere, *Tissues (Biology), Radiation instruments, Therapy, Diagnosis, Radiobiology.

Kevlishvili, G. E.
THE TRANSPLANTATION OF BONE MARROW DURING ACUTE RADIATION SICKNESS UNDER EXPERIMENTAL CONDITIONS. 7 Sep 62 [48]p. 99 refs. JPRS: 15154.
Order from OTS or SLA $4.60 62-32888

Trans. of mono. (pamphlet) Transplantatsiya Kostnogo Mozga pri Ostroi Luchevoi Bolezni v Eksperimente, Tbilisi, 1961, p. 3-52.

DESCRIPTORS: *Bone marrow, Transplantation, *Radiation sickness.

Acute radiation sickness in dogs irradiated with lethal doses (600 r) proceeds in a less severe state both clinically and hematologically following intravenous injection of bone marrow suspension, than in the control dogs. The transplantation of puppy bone marrow proved to be much more effective than the transplantation of bone marrow from adult dogs. The best therapeutic effect is observed with intraosseal transplantation of puppy bone marrow suspension concurrently with the administration of dimedrol (2 ml of a 2% solution of dimedrol intramuscularly daily for a period of 10-12 days). The transplantation of bone marrow suspension yields the best effect if carried out on the third or fourth day after irradiation. Repeated transplantations of bone marrow (more than two) cause a depression of hemopoiesis and the death of the animals. The transplantation of bone marrow suspension both intravenously and intraosseally is borne by the recipients without any reactions whatsoever. A mild form of radiation sickness, a high rate of survival, a picture of hemopoietic recovery, changes in the albumin fractions of the blood, as compared with the control animals, as well as the histomorphological and histochemical data confirm the effectiveness of bone marrow transplantation. (Author)

Kozlova, A. V., Zayrat'yants, V. B. and others.
STUDY OF CERTAIN ASPECTS OF THE PATHOGENESIS OF RADIATION INJURIES OF THE SKIN.
3 May 62 [10]p. 12 refs. JPRS: 13644.
Order from OTS or SLA $1.10 62-24381

Trans. of #Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 1, p. 16-21.

DESCRIPTORS: *Radiation injuries, *Skin, *Tumors, Therapy.

Considerable and stable disturbances of vascular permeability originate in the area of cutaneous radiation injuries. The course of radiation ulcers is accompanied by a secondary infection. This infection is of mixed nature and is represented by cocco-bacillary flora. The clearing of the ulcer and considerable decrease of microbial flora in it always coincided with the period of the start of marked epithelialization. The periods of the appearance of epithelialization and formation of granulations in the ulcer did not depend on the type of the employed biogenic stimulators. The therapeutic effect of these preparations depended on the general state of the organism, the extent of the ulcer defect and, to a lesser degree, on the localization of radiation injuries. For the creation of favorable healing conditions a bacteriostatic effect on the microbial flora is required, because the suppression of the latter is one of the essential prerequisites for the origin of reparation processes in the ulcer. Our experimental investigations permit us to state that the regeneration of the epithelial cover proceeds simultaneously with the development of granulations in the ulcer. Inhibition of the development of one of these components leads to the retarded regeneration of the other. The development stage of radiation ulcers is an irreversible process which leads to the structural reorganization of all cutaneous elements at the seat of injury. This reorganization is directed toward sclerosis and has a certain similarity to senile cutaneous changes. (Author)

Lebedinskii, A. V. and Moskalev, Yu. I., eds.
BIOLOGICAL ACTIVITY AND MIGRATION OF RADIOACTIVE ISOTOPES: [SELECTED PARTS].
31 Aug 62 [74]p. JPRS: 15067.
Order from OTS or SLA $7.60 62-32836

Trans. of mono. Raspredelenie Biologicheskoe Deistvie i Migratsiya Radioaktivnykh Izotopov, Moscow, 1961, p. 90-93, 264-269, 298-330, 342-343.

DESCRIPTORS: *Radioactive isotopes, *Cesium, *Strontium, *Phosphorus, *Skin, Absorption, *Reproductive system, Fertility, *Atmosphere, Water, *Radiological contamination, Bacteria, *Fish, Ethylenedinitrilo tetracetates.

Contents:
Absorption of cerium-144 through rat skin and the effect of Na_2EDTA on absorption, by S. A. Rogacheva
Data on the sterilizing action of strontium-90, by L. N. Budko
Certain data on radioactive strontium as a factor in contamination of the atmosphere, by A. N. Marei
Certain data on the movement of radioactive strontium in ground water, by A. S. Belitskii and others
The effect of radioactive strontium on water microflora and processes of mineralization of organic substances, by V. M. Zhogova

The accumulation of strontium-90 by young leucaspius and carp, by G. D. Lebedeva
The distribution, elimination and coefficients of accumulation of strontium-90, cesium-137 and phosphorus-32 in fish, by D. I. Il'in and Yu. I. Moskalev
Table of contents.

Smirnov, R. V., Vartanyan, L. S., and Emanuel', N. M.
THE EFFECT OF SINGLE DOSE GAMMA-IRRADIATION ON THE FREQUENCY OF OVARIAN TUMOR DEVELOPMENT IN MICE [AND] THE INACTIVATION OF LACTIC DEHYDROGENASE BY FREE RADICALS WHICH ARE FORMED FROM INHIBITORS OF RADICAL PROCESSES. 14 Sep 62 [16]p. 27 refs. JPRS: 15277.
Order from OTS or SLA $1.60 62-33034

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 143, no. 5, p. 1211-1218.

DESCRIPTORS: *Radiation effects, *Gamma rays, *Tumors, Growth, *Ovaries, Mice, Enzymes, *Metabolism inhibitors, *Free radicals, *Dehydrogenases, Lactic acid, Catalysis.

The results of the study testify to a marked cancerogenic action of ionizing radiation on the ovaries of mice. An analysis of the changes in frequency of different types of tumors indicates that, for the development of granulosa-cell tumors and luteomas, the optimal dose is 100 r, whereas the highest frequency of tubular adenomas is observed only after irradiation in a dose of 200 r. Moreover, the frequency of development of the latter is considerably higher than that of other tumors. The maximal frequency of cilioepithelial cysts remains essentially unchanged in the interval of doses between 100 and 400 r. These data lead us to conclude that granulosa-cell tumors and luteomas may be associated with a lesser degree of radiation damage to the ovaries than is necessary for the development of tubular adenomas. (Extract)

Surgery

CHINESE JOURNAL OF SURGERY, 1961, VOL. 9, NOS. 2-8 AND 1962, VOL. 10, NO. 1: TABLES OF CONTENT. 27 Aug 62 [46]p. JPRS: 14996.
Order from OTS or SLA $4.60 62-32567

Trans. of Chung Hua Wai K'o Tsa Chih (Chinese People's Republic) 1961, v. 9, nos. 2-8 and 1962, v. 10, no. 1, tables of content and in some cases the introductory paragraph to the article concerned.

DESCRIPTORS: *Surgery, China, Medicine

Bogdanov, F. R. and Levenets, V. N.
THE USE OF PRESERVED BONE-CARTILAGE HOMOTRANSPLANTS IN PLASTIC SURGERY OF THE HIP JOINT. Preliminary Report. 30 July 62 [9]p. 18 refs. JPRS: 14634,
Order from OTS or SLA $1.10 62-32074

Trans. of Novyi Khirurgicheskii Arkhiv (USSR) 1962 [v. 41] no. 4, p. 31-35.

DESCRIPTORS: *Bone, *Cartilage, Tissues (Biology), *Transplantation, *Plastic surgery, *Joints (Physiology), Orthopedics.

Bogomolova, O. R.
MORPHOLOGICAL INFORMATION ON PLASTIC SURGERY OF VESSELS BY MEANS OF LYOPHILIZED TRANSPLANTS. 21 Mar 62 [11]p. 11 refs. JPRS: 13155.
Order from OTS or SLA $1.60 62-23772

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 1, p. 63-69.

DESCRIPTORS: *Plastic surgery, *Blood vessels, Transplantation, *Freeze-drying.

The use of the technique of the mechanical vessel suture permits plastic surgery not only of the aorta but of median arteries, as mechanical sutures, in distinction from hand sutures, do not produce lumen stenosis. In vessel plastic surgery with lyophilized homotransplants, using the mechanical suture, thrombi are distributed, as a rule, some distance from the suture line. Conservation by the lyophilization method does not preserve unchanged vessel structure, but elicits necrobiotic and destructive changes. Following transplantation of lyophilized homotransplants, destructive changes continue, irrespective of functional success. As a result of these changes, the tunica media assumes the aspect of an acellular network of elastic and collagenous fibers. With the passage of time, the elastic fibers too may disintegrate, replaced by connective tissue, particularly in the central portion of the transplant. Structure restoration of lyophilized transplants and, consequently, true adaption does not occur; they can be regarded only as biological prosthesis. (Author)

Golovin, G. V.
BONE HOMOPLASTY: ACCORDING TO DATA FROM THE SOVIET AND FOREIGN LITERATURE. [1962] 38p. 57 refs. [NIH] no. 179.
Order from OTS or SLA $3.60 62-23508

Trans. of Vestnik Khirurgii (USSR) 1956, v. 77 [no. 9] p. 100-113.

DESCRIPTORS: *Plastic surgery, *Bones, *Transplantation, Preservation.

Komorovskii, Yu. T. and Shamraevskii, S. M.
THE USE OF BIACTIVE ELECTRODES IN GASTRO ESOPHAGOJEJUNODUODENOPLASTY (Opyt Primeneniya Biaktivnykh Elektrodov pri Gastro- i Ezofagoeyunoduodenoplastike). 12 Mar 62 [11]p. 40 refs. JPRS: 12886.
Order from OTS or SLA $1.60 62-23439

Trans. of Novyi Khirurgicheskii Arkhiv (USSR) 1961, [v. 40] no. 11, p. 51-57.

DESCRIPTORS: Surgery, Excision, *Stomach, *Plastic surgery, *Intestine, *Surgical instruments, Surgical trauma, Hemorrhage

Gastro- and esophago-jejunoduodenoplasty ensures the passage of the food mass bolus through the duodenum and upper portion of the jejunum, prevents the development of pathologic syndromes and facilitates normalization of the digestive processes after gastric resection. The use of the biactive electroscissors and biactive hemostatic forceps in replacing the resected stomach with a small-intestinal graft makes the operation bloodless, facilitates creation of the enteroduodenal and enterogastric anastomoses and shortens the duration of the procedure. The biactive electrodes, while preserving all of the advantages of electrosurgery, eliminate the possibility of producing foci of coagulation beyond the zone of application of the electrode and ensure the complete safety of the operation on organs of the gastro-intestinal tract. (Author)

Salalykin, V. I.
PLASTIC CLOSURE OF A DURA MATER DEFECT BY A POLYVINYL LAMELLA. 28 June 61 [5]p. 3 refs JPRS: 4734.
Order from OTS or SLA $1.10 61-27125

Trans. of Voprosy Neirokhirurgii (USSR) 1960, v. 25 [sic] no. 2, p. 50-53.

DESCRIPTORS: *Plastic surgery, *Meninges, Brain, Injuries, *Plastics, Polymers, Vinyl radicals, Alcohol, Prosthetics, *Laminates.

Zoology

Miron, Ion.
DATA ON FISH IN THE BISTRITA RIVER AND THEIR LONG RANGE PROSPECTS FOR DEVELOPMENT IN THE BICAZ STORAGE LAKE. 16 Apr 62 [12]p. JPRS: 13484.
Order from OTS or SLA $1.60 62-24003

Trans. of Natura (Rumania) 1961, v. 13, no. 5, p. 61-65.

DESCRIPTORS: *Fishes, *Lakes, Dams, *Hydroelectric power systems, Growth, Ecology, Nutrition, *Rumania, Marine biology.

Osipyan, V. T., Grabovskii, B. S. and others.
ON METHODS FOR LABORATORY SELECTION OF REPELLANT PREPARATIONS AND AN EVALUATION OF THEIR ACTIVITY IN RELATION TO FLEAS. 28 Mar 62 [7]p. 6 refs. JPRS: 13282.
Order from OTS or SLA $1.10 62-23765

Trans. of Meditsinskaya Parazitologiya i Parazitarnye Bolezni (USSR) 1961, v. 30, no. 6, p. 734-737

DESCRIPTORS: *Insecticides, Test methods, Statistical analysis, *Fleas, Parasitology.

A modification is suggested for the method proposed in 1946 by Lindusca, Cochran, and Morton for measuring the ability of preparations to repel fleas.

Poltev, V. I. and Gritsenko, I. N.
PRODUCING VIRULENT BACTERIA TO CONTROL THE WATER VOLE (ARVICOLA TERRESTRIS L.). 29 Mar 62 [20]p. 9 refs. JPRS: 13204.
Order from OTS or SLA $1.60 62-23763

Trans. of Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1961, no. 6, p. 99-105.

DESCRIPTORS: Epidemiology, *Disease carriers, *Rodents, Control, *Bacteria.

The erysipeloid under natural conditions causes epizooty among water vole. The infectious process proceeds in the form of sepsis: the disease stimulus is excreted from the heart, lymph nodes, liver, spleen, kidneys, and bone marrow. The erysipeloid of strain 295, excreted from water vole, during subcutaneous and oral administration results in the destruction of this animal, but it does not cause illness in the rabbit, muskrat, guinea-pig, and pigeon. Subcutaneous passing through the organism of the water vole for 18 passages increases the virulence of strain 295 a hundred times and with subsequent oral passing, compared with the initial, it increases it 10 to 17 times with the same method of infection. Increase in the virulence of the erysipeloid of strain 295 for the water vole does not cause pathogenicity to the rabbit, muskrat, guinea-pig, and pigeon. (Author)

Sidorovski, M[ils].
SOME MORPHOLOGICAL CHARACTERS OF TROUT FROM LAKE MAVROVO AND THE RIVER RADIKA (Nekoi Morfoloski Karakteri na Pastrmkite od Mavrovskoto Ezero i Reka Radika) tr. by Dusan Glumac. 1962, 14p. 3 refs. PL-480 Int.
Order from OTS $0.50 60-21648

Trans. of [Zavod za Ribarstvo NR Makedonije]. Izdanija (Yugoslavia) 1955, v. 1, no. 5, p. 135-147.

DESCRIPTORS: *Fisheries, Fishes, *Trout, Morphology, Lakes, Rivers, Ecology.

Mavrovo Lake, in addition to its main purpose, to serve as an accumulation for electric power, may be utilized for fishery purposes. The Lake is still forming and has not been so far stabilized physically, chemically and biologically. During summer the temperature of the water is relatively high, organic matter on the bottom is exposed to intensive decomposition, and the oxygen content of the water is low. For that reason fish live at the mouths of tributary rivers at that time. During the winter, water conditions are again normal. At the present moment the lake is inhabited by fish that were living in the streams of the Radika River. Real statistical differences between trout from Mavrovo Lake and the Radika River were established only for the relation of the eye diameter ($d\frac{\varphi}{\sigma} = 7.16$, $d\frac{\varphi}{\varphi} = 7.43$), and for the relation of the upper jaw width ($d\frac{\sigma}{\sigma} = 4.37$, $d\frac{\varphi}{\varphi} = 3.20$). It is necessary to bear in mind that the material examined was not equal as to size, and for all other features differences were not established. The Mavrovo trout, taking into consideration all these indications, represents for the time being only an ecotype which in the further development of the lake may be developed into a separate species. (Author)

CHEMISTRY

JOURNAL OF APPLIED CHEMISTRY, 1946, VOL. 19, NO. 1: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1961] 5p. 11 refs.
Order from OTS or SLA $1.10 62-14166

Abstract trans. of Zhurnal Prikladnoi Khimii (USSR) 1946, v. 19, no. 1, p. 7-21, 23-29, 35-39, 97-101.

DESCRIPTORS: *Chemistry, Abstracting, Phenols, Alcohols, Aldehydes, Phenolic resins, Plastics, Substitutes, Urea, Resins, Ketones, Chlorination, Synthesis, Acetones, Activated carbon, Benzenes, Adsorption, Adsorbents, Gases.

Contents:
Phenol alcohols as substitutes for thermoreactive phenol-aldehyde resins in the manufacture of plastics, by A. A. Vansheidt and A. A. Vasil'ev

Stabilization of aqueous solutions of carbamide resins, by A. A. Berlin and B. D. Izyumov
Synthesis of chloroheptenone, by G. V. Isagulyants
Semicontinuous method of preparation of diacetone alcohol, by B. P. Ershov and V. L. Pridorogin
Desorption of solvents from activated carbon by inert gases, IV., by N. D. Gorchakov and Z. S. Vanyushina.

Bokuchava, M. A.
UN NUEVO METODO DE ESTUDIO DE LA PEROXIDASA EN PRESENCIA DE POLIFENOLOXIDASA Y CATALASA (Novyi Sposob Izucheniya Peroksidazy) (A New Method Employed in the Study of Peroxydase in the Presence of Polyphenoloxydase and Catalase). 11p. CID: 62-4. (text in Spanish).
Order from OTS or ETC $1.05 62-26204

Trans. of Akademiya Nauk SSSR. Doklady, 1948 [v. 60] no. 3, p. 409-412.

DESCRIPTORS: *Peroxydase, Catalase.

Goyanna, Castro.
TOBACCO AND VITAMIN C (PRELIMINARY REPORT). [1962] 10p.
Order from K-H $12.50 K-H 3799-b

Trans. of Brasil-Méd[ico] 1955, v. 69, no. 14/18, p. 173-177.

DESCRIPTORS: *Tobacco, *Ascorbic acid.

Grammaticakis, P.
CONTRIBUTION TO THE STUDY OF THE ABSORPTION IN THE MEDIUM ULTRAVIOLET, AND IN THE VISIBLE END, OF SOME AROMATIC ALDEHYDES AND KETONES AS WELL AS OF SOME OF THEIR FUNCTIONAL DERIVATIVES. [1962] 45p.
Order from K-H $56.25 K-H 5199

Trans. of Société Chimique de France. Bulletin, 1953, no. 9, p. 821-826.

DESCRIPTORS: Absorption, *Ultraviolet spectroscopy *Aldehydes, *Ketones.

Shakhnovskii, L. N.
INFLUENCE OF AMMONIA ON THE FLAVOR STRENGTH OF TOBACCO PRODUCTS. [1962] 8p.
Order from K-H $10.00 K-H 3439-b

Trans. of Tabak (USSR) 1954, v. 15, no. 3, p. 40-44.

DESCRIPTORS: *Ammonia, *Taste, *Tobacco, Cigarettes.

Yunoshev, V. K.
QUANTITATIVE CHANGES OF CHLOROGENIC AND CAFFEIC ACIDS IN THE FERMENTATION OF TOBACCO. [1962] 10p. 19 refs.
Order from OTS or SLA $1.10 62-16515

Trans. of Izv[estiya] Vys[shikh] Ucheb[nykh] Zav[edenii]. Pishch[evaya] Tekh[nologiya] (USSR) 1961, no. 4, p. 44-50.

DESCRIPTORS: *Tobacco, *Fermentation, Quantitative analysis, Temperature, Oxidation, Phenols, *Caffeic acids, *Chlorogenic acids

The effects of time and temperature of fermentation of tobacco on β-glycosidase activity and on the content of non-oxidised forms of chlorogenic and caffeic acids were investigated. It was found that in the initial stages of the fermentation the quantities of chlorogenic and caffeic acids decrease independently of the temperature. The greatest decrease of the quantities of these acids takes place during the fermentation at 30°C. It is suggested that the accumulation of the non-oxidised forms of chlorogenic and caffeic acids is connected with oxidation-reduction reactions in which the reversibly oxidised phenols are converted into the reduced state. (Author)

Analytical Chemistry

Belen'kii, B. G. and Baraboshina, L. S.
MICROANALYTICAL HYDROGENATION. 30 Apr 62 [12]p. 10 refs.
Order from OTS or SLA $1.60 62-18032

Trans. of #Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1961, v. 16 [no. 3] p. 337-342.

DESCRIPTORS: *Biochemistry, *Microanalysis, Maleic acid, Hydrogenation, Catalysts, *Manometers, *Reaction kinetics.

An apparatus for microanalytical hydrogenation (hydrogenation vessels and manometers) was developed, permitting the quantitative hydrogenation of a compound with hydrogenation equivalent $\simeq$ 100 with an accuracy of $\pm$ 0.5%, using a 10 mg sample and mercury as the manometric liquid. Using maleic acid as an example, it was shown to be possible to use the modified apparatus for studying the kinetics of catalytic hydrogenation. (Author)

Belyavskaya, T. A. and Fadeeva, V. I.
QUANTITATIVE SEPARATION OF BERYLLIUM FROM VARIOUS ELEMENTS BY THE METHOD OF ION-EXCHANGE CHROMATOGRAPHY, tr. by F. E. Wallwork. Apr 62 [12]p. 4 refs. AWRE/Trans/33; [DSIR] NLL M. 6213.
Order from OTS or SLA $1.60 62-25936

Trans. of Moscow U. Vestnik. Seriya Fiziko-Matematicheskikh i Estestvennykh Nauk (USSR) 1956, v. 11, no. 6, p. 73-79.

DESCRIPTORS: *Beryllium, Separation, Quantitative analysis, *Chromatographic analysis, *Ion exchange, Copper, Nickel, Molybdates, Phosphates.

Conditions for the adsorption of beryllium by SBS cation exchanger (as a function of the pH of the original solutions) and for its desorption by HCl, NaOH, and solutions of ammonium carbonate and sodium bicarbonate have been established. A method is described for the quantitative separation of beryllium from copper and nickel and from molybdate and phosphate ions by the use of SBS cation exchanger. (Author)

Brodskaya, I. N., Kernos, Yu. and Teodorovich, V. P.
EMPLEO DEL METODO DEL ARSENICO PARA PURIFICACION DE GASES CON GRAN CONTENIDO EN CARBONICO (Primenenie Mysh'yakogo-sodovogo Metoda dlya Ochistki Gazov s Vysokim Soderzhaniem Uglekisloty) (Utilisation of the Arsenic Method for the Purification of High Carbon Dioxide Content Gases) 7p. CID: 62-49. (text in Spanish).
Order from OTS or ETC $0.90 62-26249

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1959, [v. 32] no. 12, p. 2791-2793.

DESCRIPTORS: *Purification, Gases, *Carbon dioxide, Arsenic.

Demole, E., Lederer, E., and Mercier, D.
ISOLATION AND DETERMINATION OF THE STRUCTURE OF METHYL JASMONATE, ODORIFEROUS CONSTITUANT CHARACTERISTICS OF JASMINE OIL. [1962] 12p. 38 refs.
Order from SLA $1.60 62-18062

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1962, v. 45, p. 675-685.

DESCRIPTORS: *Odors, *Oils, Chemical analysis, Plants.

A new odoriferous component, for which we propose the name "Methyl jasmonate", has been isolated from jasmine oil (Jasminum grandiflorum L.). This compound is shown to be (-)-methyl cis-2-pent-2'-enyl-3-oxocyclopentylacetate. (Author)

Gavrilov, O. I.
VERGLEICH EINIGER BESTIMMUNGSMETHODEN VON HYDROXYLGRUPPEN VON VITRITKOHLEN AUS DEM DONEZBECKEN (Comparison of Some Methods of Determination of Hydroxyl Groups of Vitrit Coals of the Donez Basin). 5p. (text in German).
Order from T.I.B. $1.40

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1960, no. 4, p. 187-188.

DESCRIPTORS: Determination, Methods, *Hydroxides, *Coal, USSR.

Guglialmelli, L. and Hordh, C.
USE OF THE ARSENOTUNGSTIC REAGENT IN THE METHOD OF BERTRAND AND JAVILLIER FOR THE DETERMINATION OF NICOTINE. [1962] 3p.
Order from K-H $3.75 K-H 5448-c

Trans. of [Asociación] Quimica Argentina. Anales, 1919, v. 7, p. 121-123.

DESCRIPTORS: *Nicotine, Biochemical tests, Reagents, Arsenic, Tungsten.

Hahn, M.
STUDIES ON NICOTINE AND ITS REMOVAL FROM TOBACCO SMOKE. [1962] 25p.
Order from K-H $31.25 K-H 5176-a

Trans. of Z[eitschrift] f[ür] Hygiene und Infektionskrankheiten (Germany) 1931, v. 112, p. 680-697.

DESCRIPTORS: *Nicotine, Separation, *Tobacco, *Smokes, Cigarettes.

Homann, W. F.
METHOD FOR THE DETERMINATION OF POROSITY IN CIGARETTE PAPER. [1962] 6p.
Order from K-H $7.50 K-H 3140-c

Trans. of Chemische Technik (East Germany) 1953, v. 5, p. 716-717.

DESCRIPTORS: Porosity, *Paper, *Cigarettes.

Janak, J.
CHROMATOGRAPHIC SEMI-MICROANALYSIS OF GASES (PRELIMINARY REPORT). [1962] 10p.
Order from K-H $12.50 K-H 3963-a

Trans. of Chem[icke] Listy (Czechoslovakia) 1953, v. 47, p. 464-467.

DESCRIPTORS: *Chromatographic analysis, Microanalysis, *Gases.

Janak, J.
CHROMATOGRAPHIC SEMI-MICROANALYSIS OF GASES, PT. I. [1962] 23p.
Order from K-H $28.75 K-H 3963-b

Trans. of Chem[icke] Listy (Czechoslovakia) 1953, v. 47, p. 817-827.

DESCRIPTORS: *Chromatographic analysis, *Gases, Microanalysis.

Janak, J.
CHROMATOGRAPHIC SEMI-MICROANALYSIS OF GASES, PT. II. [1962] 17p.
Order from K-H $21.25 K-H 3963-c

Trans. of Chem[icke] Listy (Czechoslovakia) 1953, v. 47, p. 828-836.

DESCRIPTORS: *Chromatographic analysis, Microanalysis, *Gases.

See also K-H 3963-b

Janak, J.
CHROMATOGRAPHIC SEMI-MICROANALYSIS OF GASES, PT. III. [1962] 31p.
Order from K-H $38.75 K-H 3963-d

Trans. of Chem[icke] Listy (Czechoslovakia) 1953, v. 47, p. 837-841.

DESCRIPTORS: *Chromatographic analysis, Microanalysis, *Gases.

See also K-H 3963-c

Jordt, H.
TOBACCO PURIFICATION. [1962] 6p.
Order from K-H $7.30 K-H 4069-b

Trans. of Chemiker Z[ei]t[un]g (Germany) 1931 [v. 55] no. 48, p. 462-463.

DESCRIPTORS: *Tobacco, Purification.

Karsten, F.
DETERMINATION OF FLUOSILICIC AND FLUOBORIC ACIDS AND SOME ORGANIC COMPOUNDS IN ELECTROPLATING SOLUTIONS. [1962] 5p. (equations refs. omitted).
Order from SLA $1.10 62-16979

Trans. of Metalloberfläche (West Germany) 1954, v. 6, no. 4, p. B53-B55.

DESCRIPTORS: *Electroplating solutions, Organic compounds, Fluosilicic acids, Fluoborates, Boric acids, Determination.

Kazanskii, B.
VOLUMETRIC RAPID DETERMINATION OF NICOTINE WITH SILICOTUNGSTIC ACID. [1962] 11p.
Order from K-H $13.75 K-H 4072-c

Trans. of Z[eitschrift] f[ür] Anal[ytische] Chem[ie] (Germany) 1931, v. 83, p. 107-114.

DESCRIPTORS: *Nicotine, Determination, *Tungstic acid, Silicon compounds.

Klein, G. and Herndlhofer, E.
MICROCHEMICAL DETECTION OF ALKALOIDS IN PLANTS, II. [1962] 12p.
Order from K-H $15.00 K-H 4078

Trans. of Österreichische Botanische Zeitschrift (Austria) 1927, v. 76, p. 222-228.

DESCRIPTORS: Microchemistry, *Plants, *Alkaloids, *Detection (Chemical).

Kobata, Jiro; Akinaga, Yasuki; and Itaishi, Taeko.
ULTRAVIOLET ABSORPTION METHOD FOR THE DETERMINATION OF NICOTINE. [1962] 14p.
Order from K-H $17.50 K-H 6063 b

Trans. of article from an unidentified source, n. d.

DESCRIPTORS: *Ultraviolet spectroscopy, Determination, *Nicotine.

Kovalenko, E. I.
THE NICOTINE CONTENT OF TOBACCO SMOKE. [1962] 16p.
Order from K-H $20.00 K-H 5461-c

Trans. of [Vsesoyuznyi Nauchno-Issledovatel'skii Institut Tabachnoi i Makhorkovoi Promyshlennosti. Trudy] (USSR) 1931, v. 81, p. 77-85.

DESCRIPTORS: *Nicotine, *Tobacco, *Smokes.

Laforque-Kantzer, Denise.
CONTRIBUTION TO THE STUDY OF THE CONSTITUTION AND THE RELATIONSHIP OF POLY- AND METAPHOSPHATES. [1962] 90p.
Order from K-H $112.50 K-H 5083-b

Trans. of Ann[ales de] Chim[ie] (France) 1950 [ser. 12] v. 5, p. 819-881.

DESCRIPTORS: *Chemical analysis, *Phosphates.

Latarjet, R. and others.
QUANTITATIVE DETERMINATION OF 3,4-BENZOPYRENE FORMED BY COMBUSTION OF CIGARETTE PAPER AND TOBACCO. [1962] 19p.
Order from K-H $23.75 K-H 5709-a

Trans. of Association Française pour l'Etude du Cancer. Bull[etin] 1956, v. 43, no. 2, p. 180-198.

DESCRIPTORS: *Benzopyrenes, *Combustion, *Cigarettes, Paper, Tobacco.

Lavrukhina, A. K.
DETERMINATION OF MANGANESE OXIDES OF VARIOUS VALENCIES WHEN PRESENT TOGETHER, tr. by V. N. Pavloff. 1962, 13p. 15 refs. NRCC Technical Trans. 1035.
Order from NRCC $1.00 NRCC C-4062

Trans. of Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1949, v. 4, no. 1, p. 40-45.

DESCRIPTORS: *Ores, *Manganese compounds, Oxides, Dioxides, Valence, Determination, Solubility.

Lebedeva, A. I., Nikolaeva, N. A., and Orestova, V. A.
RAPID, SIMPLIFIED METHOD FOR C AND H DOSAGE IN MONOMERIC AND POLYMER FLUORO-ORGANIC COMPOUNDS. [1962] 4p. 18 refs.
Order from OTS or SLA $1.10 62-16560

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim-[icheskikh] Nauk. Izvest[iya] 1961, no. 7, p. 1350-1352

DESCRIPTORS: *Carbon, *Hydrogen, Dosage, Chemical analysis, *Fluorine, Organic compounds, Silver compounds, Vanadates.

A simple and handy method for microdetermination of carbon and hydrogen in fluoroorganic compounds is proposed. The method is applicable to monomeric and polymer fluoro- and perfluoroorganic compounds with a fluorine content up to 75%. Chlorine, bromine, nitrogen and sulfur or boron do not interfere in the determination. The error of the method is of ± 0.3% (Author)

Lepeshkov, I. N.
ALL-UNION CONFERENCE ON THE PHYSICO-CHEMICAL ANALYSIS DEDICATED TO THE CENTENNIAL OF THE BIRTH OF N. S. KUNAKOV (NO. 4). 22 Mar 62 [7]p. JPRS: 13150.
Order from OTS or SLA $1.10 62-23580

Trans. of #Zhurnal Neorganicheskoi Khimii (USSR) 1961, v. 6, no. 6, p. 1490-1491.

DESCRIPTORS: *Conferences, *Physical chemistry, *Chemical analysis, Chemists

Markova, Z. A.
STUDY OF THE ALUMINO SILICATE CATALYSTS STRUCTURE BY THE METHOD OF INFRARED SPECTROSCOPY. [1962] 5p. 13 refs.
Order from OTS or SLA $1.10 62-16564

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2 [no. 3] p. 435-439.

DESCRIPTORS: *Alumina-silica catalysts, Molecular structure, Surface properties, *Infrared spectroscopy.

The absorption spectrum in the region of 11μ 3μ by aluminosilicate was studied in the present work. The found data permit the conclusion, that the structure of aluminosilicate skeleton (presence of AlO_4 tetrahedrons and AlO_6 octahedrons) and also the structure of its surface are analogous to these of montmorillonite. (Author)

Mikhailov, M[ikhail] K.
ENZYMATIC OXIDATION OF TOBACCO POLYPHENOLS [Ob Enzimaticheskom Okislenii Tabachnykh Polifenolov]. [1962] 14p.
Order from K-H $17.50 K-H 8995-a

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, v. 121, no. 3, p. 511-514.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 61-15378, CTS-625, May 59 [6]p.

DESCRIPTORS: *Enzymes, Oxidation, *Tobacco, *Phenols, Polymers

For abstract see Technical Translations 5: 653, 1961.

Mikhailov, Mikhail K.
INVESTIGATION OF FLAVONOIDS OF THE POLYPHENOL GROUP OF TOBACCO BY THE METHOD OF PAPER CHROMATOGRAPHY [Issledovanie Flavonoidov Polifenol'noi Gruppy Tabaka Metodom Bumazhnoi Khromatografii]. [1962] 6p.
Order from K-H $7.50 K-H 5575-b

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 108 [no. 3] p. 511-514.
Other translations are available from LC or SLA mi$1.80, ph$1.80 as 59-10145, CTS-329, May 57 [4]p. and from SLA as R-3795.

DESCRIPTORS: *Vitamin P, Phenols, *Tobacco, *Paper chromatography.

Morani, V. and Giovannini, E.
COLORIMETRIC DETERMINATION OF NICOTINE. [1962] 15p.
Order from K-H $18.75 K-H 3596-a

Trans. of [la] Chimica e [l']Industria (Italy) 1955, v. 37 [no. 2] p. 109-112.

DESCRIPTORS: *Nicotine, Determination, Colorimetric analysis.

Nametkin, S. S., Melnikov, N. N. and Basakov, Yu. A.
DIE IDENTIFIZIERUNG VON PHENOLEN (Identification of Phenols). 2p. (text in German).
Order from T.I.B. $1.40

Trans. of Zhurnal Analiticheskoi Khimii (USSR) 1950, v. 5, p. 7-13.

DESCRIPTORS: *Phenols, Identification systems.

Peregud, E. A. and Boikina, B. S.
MICRO DETERMINATION OF ELEMENTARY FLOURINE. [1962] 5p. 13 refs.
Order from OTS or SLA $1.10 62-14207

Trans. of #Zh[urnal] Analit[icheskoi] Khimii (USSR) 1957, v. 12, no. 4, p. 513-515.

DESCRIPTORS: *Fluorine, Detection (Chemical), Air, Microanalysis, *Colorimetry, *Chemical indicators.

Based on the reaction of F_2 with fluorescein and with methyl-red, the quantitative method for the determination of traces of elementary fluorine in the air was developed. (Author)

Peregud, E. A. and Boikina, B. S.
MICRO-METHOD FOR THE DETERMINATION OF FLOURINE MONOXIDE (Mikrometod Opredeleniya Monookisi Ftora). [1962] 2p. 3 refs.
Order from OTS or SLA $1.10 62-14206

Trans. of #Zh[urnal] Analit[icheskoi] Khimii (USSR) 1959, v. 14, no. 1, p. 141-142.

DESCRIPTORS: *Poisonous gases, Oxygen compounds, *Fluorides, Detection (Chemical), *Chemical indicators, Microanalysis.

The essence of this method for the determination of traces of fluorine monoxide in the air, consists in substituting bromine from potassium bromide and in the formation of tetrabromofluorescein (eosine) colored red. By passing the air containing OF_2 through the indicator-powder of silical gel, its original yellow color changes into red and thereby the length of the colored zone is proportional to the quantity of fluorine monoxide. In numerous experiments with the known quantities of OF_2, the optimal conditions for the determination were established and the calculating coefficient was experimentally found. Under the conditions that we have chosen the length of 1 mm of the colored zone corresponds to 0.334 gamma of OF_2. (Author)

Rossi, C., Munari, S. and others.
CHROMATOGRAPHY IN GAS PHASE OF C_1-C_4 HYDROCARBONS ON ORGANOPHILIC SILICAS [Cromatografia in Fase Gas di Idrocarburi C_1-C_4su Silici Organofile]. [1962] 11p.
Order from K-H $13.75 K-H 11310

Trans. of la Chimica e l'Industria (Italy) 1960, v. 42, no. 7, p. 724-727.
Another trans. is available from SLA $1.60 as 62-10318 [1961] [15]p.

DESCRIPTORS: Hydrocarbons, Isomers, *Silicon compounds, *Dioxides, Coatings, Chromatographic analysis, *Gas chromatography, Organic compounds, Adsorption.

For abstract see Technical Translations 7: 485, 1962.

Rundshagen, H.
THE DETERMINATION OF MALIC ACID AND CITRIC ACID IN TOBACCO. [1962] 7p.
Order from K-H $8.75 K-H 4056a

Trans. of German language article from an unidentified source, n.d.

DESCRIPTORS: *Malic acid, *Citric acids, *Tobacco.

Sanin, P. I.
INVESTIGATIONS OF THE ACIDS OF NATURAL BITUMENS. [1962] 24p. 14 refs.
Order from OTS or SLA $2.60 62-16441

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1943, no. 5/6, p. 18-28.
Another trans. is available from OTS or SLA $1.60 as 61-18893 [1961] 11p.

DESCRIPTORS: *Asphalts, Chemical analysis, *Organic acids, Separation, Bitumens, *Petroleum, Oils, Meteorology.

For abstract see Technical Translations 7: 873, 1962

Schmahl, Dietrich and Schneider, Hasn.
DIMINUTION OF THE INTENSITY OF FLUORESCENCE OF CIGARET SMOKE AFTER THE ACTION OF LIGHT. [1962] 13p.
Order from K-H $16.25 K-H 3808-c

Trans. of Arzneimittel-Forschung (West Germany) 1955. v. 5, no. 6, p. 348-350.

DESCRIPTORS: *Cigarettes, *Smokes, Tobacco, *Fluorescence, Light, Intensity.

Schoenhöfer, F. and Schreus, H. Th.
INVESTIGATIONS CONCERNING TOBACCO SMOKE. [1962] 22p.
Order from K-H $27.50 K-H 3614-a

Trans. of Arzneimittel-Forschung (West Germany) 1954, v. 4 [no. 1] p. 75-79.

DESCRIPTORS: *Tobacco, *Smokes, Cigarettes, Nicotine.

Tyunova, N. A.
A COMPARATIVE STUDY OF GLIADIN FROM PERENNIAL WHEAT AND ITS PARENT TYPES BY THE METHOD OF DIFFUSION SALTING-OUT (Sravnitel'noe Issledovanie Gliadina Mnovoletnei Pshenitsy i Ee Roditel'skikh Form Metodom Diffuzionnogo Vysalivaniya). Aug 62 [20]p. 27 refs. RTS 2117.
Order from OTS or SLA $1.60 62-32492

Trans. of Glavnyi Botanicheskii Sad [Pushkinskoe]. Trudy (USSR) 1960, v. 7, p. 55-66.

DESCRIPTORS: *Gliadins, *Wheat, Flour, Proteins, *Grasses, Gluten.

Preparations of gliadin were made from the perennial wheat M2 and from its parent forms: Lutescens wheat 329 and couch grass Agropyron glaucum (Roem. et Schult.) of the 1955 harvest. Increasing concentrations of alcohol were used to isolate the preparations from flour: protein losses during the waterwashing of the preparations were prevented by salting-out the washing water with $MgSO_4$. The fractional composition of the gliadin preparations was examined by the diffusion salting-out method of N. V. Zelenski. Gliadin begins to be salted-out at very low salt concentrations.

Gliadin from the perennial wheat M2 and from Lutescens 329 wheat is completely precipitated from solution even at 12% saturation with $(NH_4)_2SO_4$ but 14% saturation is required for full precipitation of gliadin from couch grass. A smaller percentage of gliadin from the perennial wheat M2 is salted-out by 1% saturation with $(NH_4)_2SO_4$ than that from gliadin of couch grass and the wheat Lutescens 329. The salting-out curve for couch grass gliadin indicates the predominance of a fraction which is more hydrophilic and more difficult to salt-out as compared with the salting-out curves for gliadin from perennial wheat M2 and Lutescens 329 wheat. The fractional composition of that portion of the gliadin from couch grass and Lutescens 329 wheat (1955 harvest) which is washed out by water is also given.

Tyunova, N. A.
CONCERNING THE FRACTIONATION OF GLIADIN (K Voprosu o Fraktsionirovanii Gliadina). Aug 62 [13]p. 13 refs. RTS 2116.
Order from OTS or SLA $1.60 62-32491

Trans. of Vsesoyuznyi Nauchno-Issledovatel'skii Institut Zerna i Produktov Ego Pererabotki. Trudy (USSR) 1961, v. 41, p. 17-25.

DESCRIPTORS: *Fractionation, *Gliadins, Wheat, *Flour, Gluten, Proteins.

Analytical salting out of the alkali extract of wheat flour gluten proteins was carried out by the Zelenskii method. Gliadin was fractionated by maintaining alcohol solutions of it at low temperatures (5°). It was shown by the diffuse salting out method that the components which salt out most readily (to 1% of saturation with ammonium sulphate) always predominate in protein precipitates from alcohol solutions at different concentrations. That part of the preparation, in which the percentage of components which salt out most readily is significantly reduced, remains in a soluble state. The partial breakdown of the gliadin preparation confirms the de facto existence of the components reflected in the diffuse salting out curves for wheat gluten proteins. (Author)

Inorganic Chemistry

Garcia-Fernandez, H.
HETEROCYCLES IN INORGANIC CHEMISTRY. [1962] 51p.
Order from ATS $38.95 ATS-18P60F

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1961, no. 12, p. 2453-2475.

DESCRIPTORS: *Heterocylic compounds, Inorganic substances.

Issleib, K. and Schwager, G.
CONTRIBUTIONS TO THE COMPLEX CHEMISTRY OF PHOSPHINE AND PHOSPHINE OXIDES. VIII. HEAVY METAL COMPLEXES OF TETRAPHENYLDIPHOSPHINE (Beiträge zur Komplexchemie der Phosphine und Phosphinoxyde. VIII. Schwermetallkomplexe des Tetraphenyldiphosphins). 15 Sep 61 [11]p. JPRS: 10134.
Order from OTS or SLA $1.60 62-24531

Trans. of Zeitschrift für Anorganische Chemie (East Germany) 1961 [v. 309] no. 3/4, p. 43-49.

DESCRIPTORS: Chemistry, *Hydrides, *Phosphorus compounds, *Phosphine oxides *Heavy element compounds, Complex compounds, *Phenyl radicals, *Phosphines, *Oxides

Complex compounds of the general composition $[(C_6H_5)_2P\text{-}P(C_6H_5)_2]_2MeX_2$, the nonelectrolytic character of which has been proved by measuring the conductivities, are formed from $(C_6H_5)_2P\text{-}P(C_6H_5)_2$ and anhydrous salts MeX_2-$NiBr_2$, $PdCl_2$, $CoBr_2$, CoI_2 in benzene or alcohol. The structural configuration of these complexes is discussed on the basis of molecular weight determinations, magnetic measurements and dipole moment measurements respectively. CuCl reacts with $(C_6H_5)_2P\text{-}P(C_6H_5)_2$ in the molecular ratio of 1:1. (Author)

Mel'nikov, A. Kh., Firsova, T. P., and Molodkina, A. N.
INVESTIGATION OF THE INTERACTION OF POTASSIUM WITH WATER VAPOR AND CARBON DIOXIDE [AND] PREPARATION OF PURE POTASSIUM PERCARBONATE AND STUDY OF SOME OF ITS PROPERTIES. 3 Aug 62, 3p. 1 ref. AID rept. 62-112; [NASA N62-14679]; AD-283 246.
Order from OTS or SLA $1.10 62-32591

Abstract trans. of #Zhurnal Neorganicheskoi Khimii (USSR) 1962, v. 7, no. 6, p. 1228-1241.

DESCRIPTORS: *Controlled atmospheres, Air, Regeneration, *Potassium compounds, Oxides, Percarbonates, Chemical properties, Water vapor, Carbon dioxide.

Protzer, Walter.
PROCESS FOR THE PRODUCTION OF TETRACHLOROSUCCINIC DICHLORIDE. [1962] 8p. 4 refs.
Order from OTS or SLA $1.10 62-16245

Trans. of German patent 1,116,647, F 27878 IVb/12 o, cl. 12o 11, internat. cl. C 07 c, by Farbwerke Hoechst Aktiengesellschaft, appl. 6 Mar 59, appl. issued and pub. 9 Nov 61.

DESCRIPTORS: *Chlorides, *Succinates, Succinic acids, Synthesis.

The process is characterized by the fact that elemental chlorine is allowed to act on acetyl chloride, chloroacetyl chloride, dichloroacetyl chloride or their mixtures in the liquid or gas phase under irradiation with light.

Sokol'skii, G. A. and Knunyants, I. L.
PREPARATION OF NITROSYL FLUORIDE AND SOME OF ITS PROPERTIES. [1962] 10p. (1 fig. omitted) 10 refs.
Order from OTS or SLA $1.10 62-16619

Trans. of #Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1960, no. 5, p. 779-783. Another trans. is available from ATS $8.50 as ATS-91M43R [1960] 5p.

DESCRIPTORS: *Nitrogen compounds, *Oxyfluorides, Preparation, Hydrolysis, Chemical properties, *Corrosion research.

A new method was found for obtaining nitrosyl fluoride by the decomposition of a mixture of nitrosone pyrosulfate and potassium fluoride. A new method was worked out for obtaining a larger quantity of nitrosyl fluoride by the continuous fluorination in the gas-phase of nitric oxide. Investigations were made as to the corrosive action of liquid nitrosyl fluoride on certain metals and alloys. The most strongly resistant to corrosion are such metals as electrolytic nickel and chrome-nickel steel IKH-18H-9T. (Author)

Thery, J., Lejus, A.-M. and others.
THE STRUCTURE AND PROPERTIES OF ALUMINATES OF ALKALI METALS. [1962] 5p.
Order from ATS $6.60 ATS-11N58F

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1961, no. 5, p. 973-975.

DESCRIPTORS: Physical properties, Chemical properties, *Aluminates, *Alkali metals.

Organic Chemistry

DIFFICULTLY INFLAMMABLE STYRENE POLYMERS. [1962] 14p.
Order from OTS or SLA $1.60 62-16248

Trans. of Belgian patent 555,618, description filed in support of appl. for pat. made by Badische Anilin- und Soda-Fabrik Aktiengesellschaft, 8 Mar 57 (Priority: Germany, appl. 10 Mar 56, under B 39 463).

DESCRIPTORS: *Styrenes, *Polymers, Production, Inflammable materials, Polymerization.

METHOD FOR THE PREPARATION OF ORGANIC BROMINE COMPOUNDS BY MEANS OF REACTIONS OF OLEFINIC COMPOUNDS WITH HYDROGEN BROMIDE. [1962] 7p. 1 ref.
Order from OTS or SLA $1.10 62-16252

Trans. of Netherlands patent 76,888, cl. 124 bb 2 d 2 (12 g 1 a 6) by N. V. de Bataafsche Petroleum Maatschappij, granted 17 Dec 54, pub. 15 Jan 55 (appl. no. 149,038 submitted 30 Sep 49, pub. 16 Aug 54).

DESCRIPTORS: *Organic compounds, *Bromine compounds, Synthesis, Ethylenes, Propenes, Butenes, Hydrogen compounds, Bromides, Chemical reactions.

METHOD FOR THE PREPARATION OF ORGANIC COMPOUNDS CONTAINING HALOGEN AND CYANIDE GROUPS. [1962] 6p. 2 refs.
Order from OTS or SLA $1.10 62-16251

Trans. of Netherlands patent 55728, cl. 12 o . 2 d 2 (12 o. 22 b) by N. V. de Bataafsche Petroleum Maatschappij, granted 16 Nov 43, pub. 15 Dec 43 (appl. no. 102,322 submitted 29 July 41, pub. 15 July 43).

DESCRIPTORS: *Organic compounds, *Halogen compounds, *Cyanides, Synthesis.

The reaction is carried out under the influence of artificial radiation with wavelengths of less than 300 mμ.

METHODS FOR THE PREPARATION OF CHLORINE-CONTAINING ORGANIC COMPOUNDS BY MEANS OF A REACTION OF OLEOFINIC COMPOUNDS WITH HYDROGEN CHLORIDE. [1962] 7p. 2 refs.
Order from OTS or SLA $1.10 62-16250

Trans. of Netherlands patent 76,886, cl. 124 bb 2d 2 (12 g 1 a 6) by N. V. Bataafsche Petroleum Mattschappij, granted 17 Dec 54, pub. 15 Jan 55 (appl. no. 149,037 submitted 30 Sep 49, pub. 16 Aug 54).

DESCRIPTORS: *Organic compounds, *Chlorine compounds, Synthesis, Ethylenes, Propenes, Butenes, Cyclohexenes, Hydrogen compounds, Chlorides, Chemical reactions

A process is given to prepare organic compounds containing Cl by the reaction of olefinic compounds (possessing at least 3 C-atoms and one or more olefinic double bond and preferably boiling below ca. 200°C) with an excess of HCl, with the purpose of carrying out the reaction under the influence of silent electric discharges and in the presence of HBr in a quantity which is small compared to that of the HCl-gas and which amounts to 0.06 to 1 mol per molecule of olefinic compound.

Arbuzov, A. E., ed.
THE CHEMISTRY AND APPLICATION OF ORGANOPHOSPHORUS COMPOUNDS. 25 Sep 62 [1160]p. 1080 refs. JPRS: 15432.
Order from OTS or SLA $38.50 62-33349

Trans. of mono. Khimiya i Primenenie Fostororganicheskikh Soedinenii, Moscow, 1962, 632p.

DESCRIPTORS: Organic compounds, *Phosphorus compounds, Chemistry, Molecular isomerism, Phosphinic acids, Phosphorus acids, Sulfonamides, Imides, Amides, Phosphoric acids, Phosphines,

Phosphites, Chlorine, Methanes, Cyanates, Naphthalenes, Tartrates, Iodides, Halides, Carboxylic acids, Quinones, Carbon compounds, Azo radicals, Acetates, Esters, Polymerization, Plastics, Resins, Silanes, Sulfides, Insecticides, Acarides, Mercury compounds, Fungicides, Lubrication, Oils, Plasticizers, Dyes, Cholinesterase, Neuromuscular transmission, Nerves, Paralysis, Caramiphen, Scopolamine, Glaucoma, Radiation sickness, Spasms, Uterus, Seeds, Soils, Pest control, Charcoal, Chemical reactions.

Contents:

An introductory word, by A. E. Arbuzov
Course of the development of the chemistry of organophosphorus compounds, by B. A. Arbuzov
Some problems of the structure and reactivity of organophosphorus compounds, by M. I. Kabachnik
Some prospects of the use of organophosphorus compounds in industry, by E. L. Gefter
Tautomerism and structure of thioacids of phosphorus. Use of the hammett equation in the theory of tautomeric equilibrium, by T. A. Mastryukova
The study of tautomerism in aprotonic media, by S. T. Ioffe
Diarylthiophosphinic acids and their properties, by T. A. Melent'eva
Tautomerism of certain imides of phosphorus acids, by V. A. Gilyarov
Method of production and properties of dialkyldithiophosphinic acids, by A. E. Shipov
Some new forms of the arbuzov rearrangement, by V. A. Kukhtin, and K. M. Orekhova
Certain reactions of intermediate products of the arbuzov rearrangement, by A. I. Razumov and N. N. Bankovskaya
Diethyl ester of cyclohexanone-2-phosphinic acid and its tautomerism, by V. S. Vinogradova and N. A. Polezhaeva
Structure and reactivity of dialkylphosphorus acids, by V. S. Abramov
Oscillatory spectra of certain diethyleneamides of alkylthiophosphoric acids, by R. R. Shagidullin and N. P. Grochkin
Reactions of sulfenamides with compounds of trivalent phosphorus, by K. A. Petrov and others
Reaction of acid phosphites, thiophosphites, phosphonites, and dialkylphosphine oxides with disulfides, by K. A. Petrov and others
Reactions of sulfene chlorides and n-chloroamines with phosphorus trichloride, dichlorophosphines, and red phosphorus, by E. A. Petrov and others
Replacement of the P-O group by P-S in organophosphorus compounds, by N. N. Godovikov
Reaction of salts of dialkylphosphorous acids with diazomethane, by V. A. Gilyarov
Reactions of alkylphosphites and esters of hydroxymethylphosphinic acid with dialkylthiocarbamyl chlorides and arylisothiocyanates, by M. S. Malinovski and V. V. Alekseev
Naphthylenealkyl esters of phosphorus acid, by A. E. Arbuzov and F. G. Valitova
Alkylphosphorous esters of tartaric acid, by A. E. Arbuzov and others
A study of the reaction of diene hydrocarbons with aryl, alkyl, and phenoxychlorophosphines, by B. A. Arbuzov and L. A. Shapshinskaya
Esters of cyclopentadienyl-, indenyl-1, and fluorenyl-9-phosphinous acids, by E. N. Tsvetkov
Esters of cyclopentene-2-yl- and cyclohexene-2-yl-phosphinic acids and certain of their derivatives, by B. A. Arbuzov and E. N. Dyanova
Isocyanates of phosphorus, by A. V. Kirsanov and others
Trichlorophosphazoaryls, by I. N. Zhmurova
Reaction of phosphorus diiodide with alkyl halides, by E. S. Levchenko and others
N-dichlorophosphinylimide chlorides of carboxylic acid (isophosphazo compounds) by G. I. Derkach
Reaction of arylphosphorus chlorides with acid amides, by V. I. Shevchenko and V. T. Stratienko
Esters of dialkylphosphinous acids, by E. N. Tsvetkov
Ethyleneamidophosphonates, by K. A. Petrov and others
The reaction of dialkylphosphorous acids with quinones, by M. G. Boronkov and B. I. Ionin
Reaction of dialkylphosphorous acids with p-benzoquinone, by E. S. Shepeleva and P. I. Sanin
New ways to synthesize triorganosilyl esters of orthophosphoric and alkylphosphinic acids, by N. F. Orlov and M. G. Voronkov
Esters of dialkylarsylethylphosphinic acid, by Gil'm Kamai and E. M. Bastanov
The action of carbon tetrachloride on alkyl esters of ethylphenylphosphinous acid, by Gil'm Kamai and others
Reaction of dicarboxylic acids with menshutkin acid chlorides, by L. V. Nesterov and others
The reaction of dithiophosphoric acids with aromatic diazo compounds, by A. F. Grapov
Reaction of esters of phosphorous acid with trichloroacetyl chloride, by L. Z. Soborovskii and others
Reaction of phosphorus pentachloride with enolacetates, by I. F. Lutsenko and M. Kirilov
Research in the field of phosphorus-containing polyesters, by V. V. Korshak and others
Synthesis of certain phosphorus-containing dicarboxylic acids and the production of polyamides based on them, by V. V. Korshak and others
The synthesis, polymerization, and copolymerization of esters of vinylphosphinic acid, by G. S. Kolesnikov and others
Some means of synthesizing new organophosphorus monomers and polymers, by M. A. Andreeva and others
The synthesis of certain bifunctional compounds containing phosphorus, by B. A. Arbuzov and others
Research in the field of the synthesis and use of certain organophosphorus compounds in the plastics industry, by P. A. Moshkin and others
Phosphorus-containing polyester and polyamide resins, by K. A. Petrov and others
The use of the arbuzov rearrangement to synthesize polyphosphonates, by K. A. Petrov and others
Substituted organophosphorus compounds as monomers of high-molecular substances, by E. V. Kuznetsov and others
Vinyl esters of phosphorus acids, by I. F. Lutsenko and others
Esters of unsaturated phosphinous acids, by Chang Jung-yü
Certain derivatives of ethylalkenylphosphinic acids, by Gil'm Kama and V. S. Tsivunin
Investigation of reactions of tetraalkoxysilanes and alkyl(aryl) alkoxysilanes with phosphoric anhydride and certain phosphorus acid chlorides, by A. P. Kreshkov and D. A. Karateev
Syntheses based on phosphine, by E. V. Kuznetsov and others
The reaction of dialkyl-, diaryl-, trialkyl-, and triaryl-phosphites with bis-(dialkoxythiophosphone)-disulfides, by N. N. Mel'nikov and others

New method of synthesizing esters of thiophosphoric acid, by Ya. A. Mandel'baum and others
Synthesis, insecticidal, and acaricidal properties of O,O-diethyl-S-(2-alkylsulfinylethyl)- and O,O-diethyl-S-(2-alkylsulfonylethyl)-dithiophosphates, by M. F. Shostakovskii and others
Syntheses of certain substituted amides and mixed esters of phosphorus acids with possible physiological activity, by P. I. Alimov and others
Certain esters of phosphoric acids with mercury-containing radicals, exhibiting fungicidal action, by D. G. Yurko and others
Ethylenephosphoramides with antineoplastic action, by L. D. Protsenko
Ethylenimine derivatives of substituted phosphoric and thiophosphoric acids and their biological properties, by A. A. Kropacheva and others
The replacement of chlorine atoms in phosphonitrilchlorine trimer by amino compound radicals and the biological activity of some of its amino substitutes, by A. A. Kropacheva and others
On the mechanics of the action of organophosphorus compounds on wear in the presence of friction, by P. I. Sanin and A. V. Ul'yanova
The application of dialkyldithiophosphates in technique, by P. I. Sanin
Organophosphorus compounds containing CCl_3 groups as additives to lubricating oils, by P. I. Sanin and others
Trichlorotricresylphosphate as a plasticizer of polyvinyl chloride, by V. A. Voskresenskii
Azomethin dyes containing a phosphonic group, by M. G. Imaev
Proceedings of the section on the physiological activity of organophosphorus compounds, by E. V. Zeimal' and others
The mechanism and kinetics of the reaction of the organophosphorus compounds with cholinesterase, by V. A. Yakovlev
The biological activity of esters of mono- and dialkyl phosphinic acids and their comparative characterization, by L. S. Afonskaya and I. V. Zaikonnikova
Comparative data on the anticholinesterase activity and toxicity of certain organophosphorus compounds, by N. A. Frankov
On the dependence between the chemical structure and the pharmacological action of certain esters of ethylphosphinic acid, by G. F. Rzhevskaya
The toxicity and certain questions of the toxicodynamics of new organophosphorus insecticides, by Yu. S. Kagan
On the influence of organophosphorus substances on the neuromuscular connection, by E. K. Rozhkova and others
On the inhibiting and intensifying action of armine on neuromuscular transmission, by I. M. Rakhmatullin and V. M. Sirotkin
Experience in the use of pyrophos for the treatment of peripheral paralyses in neuritis of the radial and facial nerves, by V. N. Avekritova
Experience in the application of organophosphorus compounds for the treatment of myasthenia and peripheral paralyses, by V. V. Morzhukhin
Materials on the toxicology of the organophosphorus compounds, by S. D. Zaugol'nikov
Morphological changes in the organism of animals in poisoning with organophosphorus insecticides, by E. I. Makovskaya
The protective and medicinal properties of pentaphene in combination with scopolamine and proserine, by Kh. G. Chichin
Medicinal prophylaxis and therapy of poisonings caused by insecticides with systematic action, by K. A. Vyatchannikov
Mechanism of action of compound no 172, the p-nitrophenyl ester of dibutyl phosphinic acid, by I. V. Zaikonnikova and I. A. Studentsova
Clinical observations of the effect of p-nitrophenyl ester of dibutyl phosphinic acid (compound no 172) in glaucoma, by V. M. Krasnova
Dithio -- a new organophosphorus preparation for the treatment of glaucoma, by Z. M. Osipova
Treatment of glaucoma with organophosphorus compounds (phosphacol, armin and compound no 11) by G. I. Timinskaya
Toxicity of organophosphorus compounds to animals with radiation sickness, by A. I. Solov'ev
The use of some organophosphorus compounds as therapeutic agents and prophylactics in radiation sickness, by N. A. Loshadkin and others
The effect of organophosphorus esters on dermatophytes, by I. D. Neklesova and Z. Sh. Minyusheva
Antibacterial properties of organic compounds of phosphorus, by S. M. Vyaseleva and others
Treatment of experimental trichophytosis in animals with the dimethyl ester of α-acetoxy-β,β,β-trichlorethyl phosphinic acid (compound 307) by Z. Sh. Minyusheva
Mechanism and experimental therapy of bronchial spasm induced by organophosphorus substances, by L. G. Magazanik and I. V. Semenov
Effect of armine upon the contractive ability of the uterus, by L. V. Chugunova
The effect of alkyl esters of diethyl and dipropylphosphinic acids upon uterine contraction. (preparations 131 and 183) by N. A. Korchagina
Cholinergic systems of insects and the mechanism of the insecticidal action of the organophosphorus compounds, by A. K. Vosknesenskaya
Biological action of organophosphorus compounds, by A. M. Alekseev and T. E. Izotova
A comparative characterization of the toxicological properties of tetraethyl dithiopyrophosphate and dimethyl diethyl dithiopyrophosphate, by I. D. Neklesova and others
The effect of the treatment of corn seeds with organophosphorus compounds prior to sowing upon the growth and development of plants, by T. E. Izotova and others
Some data concerning the effect of organophosphorus compounds upon the microflora of the soil, by S. M. Samosova and others
Dithiophos as a highly effective agent for combatting pests of subtropical crops, by P. I. Mitrofanov
Organophosphorus aerosols for fighting pests of farm plants, by A. I. Sidorov and I. I. Mitrofanov
Certain results of a study and application of organophosphorus compounds in combatting the stink-bug, by D. M. Paikin and N. M. Gamper
Organophosphorus insecticides of intra-plant action as a means of protecting the young growth of grain crops from pests, by P. V. Sazonov and others
Results of testing of preparation M-81 in combatting sucking pests of fruit and decorative crops, by M. P. Shabanova and L. F. Efimova
Determination of small amounts of organophosphorus insecticides in air and food products, by M. A. Trotsenko
The sorption of vapors of organophosphorus insecticides by activated charcoal, by Yu. I. Kundiev and M. E. Podlinyaeva.

Arbuzova, I. A., Ushakov, S. N. and Rostovskii, E. N.
SOBRE LA PROPORCION DE LOS COMPONENTES EN LA SINTESIS HETEROGENEA DE CONTACTO DEL ACETATO DE VINILO (O Sootnoshenii Komponentov pri Geterogenno-kontaktnom Sinteze Vinilatsetata) (On the Proportion of Components in Vinyl Acetate Heterogeneous Contact Synthesis) 13p. 7 refs. CID: 62-16. (text in Spanish).
Order from OTS or ETC $1.10 62-26216

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1958, [v. 31] no. 11, p. 1704-1708.

DESCRIPTORS: *Acetates, *Synthesis, Chemical equilibrium, *Vinyl radicals.

Atroshenko, V. I. and Gavrya, N. A.
SOBRE LA VELOCIDAD DE DISOLUCION DEL METANO Y DE LA MEZCLA NITROGENO-HIDROGENO EN AMONIACO CONDENSADO (O Skorosti Rastvoreniya Metana i Azota-vodorodnoi Smesi v Kondensiruyushchemsya Ammiake) (On Rate of Solution of Methane and Nitrogen-hydrogen Mixture in Condensed Ammonia). 14p. 9 refs. CID: 62-20. (text in Spanish).
Order from OTS or ETC $1.15 62-26220

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1959, v. 32, no. 1, p. 99-104.
Another trans. is available in English from ATS $7.50 as ATS-63L32R [1959] 7p.

DESCRIPTORS: *Methanes, *Ammonia, *Solubility.

Belyakova, L. D. and Kiselev, A. V.
INFLUENCIA DE LA DESHIDRATACION DE LA SUPERFICIE DE GEL DE SILICE SOBRE LA ADSORCION DE VAPORES DE BENCENO Y HEXANO (Vliyanie Degidratatsii Poverkhnosti Silikagelya na Adsorbtsiyu Parov Benzola i Geksana) (Influence of Silica Gel Surface Dehydration on the Adsorption of Benzene and Hexane Vapours). 14p. 18 refs. CID: 62-40. (text in Spanish).
Order from OTS or ETC $1.15 62-26240

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 119, no. 2, p. 298-301.
Another trans. is available in English from CB $5.00

DESCRIPTORS: Silicon compounds, *Gels, Dehydration, *Adsorption, Hexanes, Benzenes.

Blagovidov, I. F. and Potolovskii, L. A.
FABRICACION DE ALQUILARILSULFONATOS (SULFONOL-np) A BASE DE POLIMEROS DE PROPILENO (Proizvodstvo Alkilarilsul'fonatov (-sul'fonola np-) na Osnove Polimerov Propilena) (Manufacture of Alkylarylsulphonates (Sulphonole np) from Propylene Polymers). 27p. 10 refs. CID: 62-44. (text in Spanish).
Order from OTS or ETC $1.75 62-26244

Trans. of Khimiya i Tekhnologiya Topliv i Masel (USSR) 1957 [v. 2] no. 8, p. 4-13.

DESCRIPTORS: *Sulfonates, Alkyl radicals, Production, Propene, Polymers.

Bock, H. and Rudolph, G.
A SIMPLE METHOD OF PREPARING ANHYDROUS HYDRAZINE, II. 17 Jan 62 [5]p. JPRS: 12024.
Order from OTS or SLA $1.10 62-24543

Trans. of Zeitschrift fllr Anorganische Chemie (East Germany) 1961, v. 311, no. 1/2, p. 117-120.

DESCRIPTORS: *Hydrazines, Anhydrides, Preparation, Dehydration, Barium compounds, Oxides.

Bogdanova, O. K., Shcheglova, A. P. and others.
CATALYTIC DEHYDROGENATION OF n-PENTENES. [1962] 8p. 19 refs.
Order from OTS or SLA $1.10 62-14815

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961, no. 4, p. 578-582.

DESCRIPTORS: *Catalysts, Oxides, *Pentenes, Dehydrogenation, Reaction kinetics, Thermodynamics.

Dehydrogenation of n-pentenes on an oxide catalyst was studied. Piperylene yields reach 25% under optimal conditions. Kinetics of n-pentenes dehydrogenation to piperylene was investigated. The reaction rate constant and the thermodynamic functions of adsorptive displacement on the oxide catalyst were determined. (Author)

Buu Hoi, N. P. and others.
AROMATIC POLYCYCLIC HYDROCARBONS. I. SUBSTITUTION DERIVATIVES OF 3, 4, 9, 10-DIBENZOPYRENE. [1962] 7p.
Order from K-H-$9.00 K-H 5756-a

Trans. of Recueil des Tra[vaux] Chimiques des Pays-Bas (Netherlands) 1956 [v. 75] Sep/Oct, p. 194-198.

DESCRIPTORS: *Hydrocarbons, *Polycyclic compounds, *Benzopyrenes, Substitution reactions

Delépine, Marcel.
ACTION OF AMMONIA ON CROTONALDEHYDE. [1962] 4p. 5 refs.
Order from SLA $1.10 62-16962

Trans. of Academie des Sciences, Paris. Comptes Rendus (France) 1943, v. 216, p. 649-652 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Aldehydes, Methyl radicals, *Acroleins, *Ammonia, Chemical reactions.

Dudinskaya, A. A., Shvekhgeimer, G. A., and Novikov, S. S.
CONDENSATION OF BUTADIENE WITH NITROOLEFINS. [1962] 3p. 10 refs.
Order from OTS or SLA $1.10 62-14816

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961, no. 3, p. 524-525.

DESCRIPTORS: *Pentadienes, Condensation reactions, *Nitro radicals, Ethylenes, *Cyclohexanes.

Dienic condensation of butadiene with nitrophilodienes was studied, and a series of corresponding adducts was produced for the first time. (Author)

Etlis, V. S. and Razuvaev, G. A.
INTERACTION OF CHLORO DERIVATIVES OF ALKENTHIOCARBONATES WITH AMMONIA AND AMINES. [1962] 5p. 1 ref.
Order from OTS or SLA $1.10 62-18061

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 142, no. 4, p. 838-840.

DESCRIPTORS: Thio radicals, *Carbonates, *Ethylenes, Chemical reactions, *Ammonia, *Amines.

The reactive capability of chlorine atoms was studied in chloroalkene thiocarbonates (ChATC). ChATC reacted very vigorously with ammonia in alcohol solution at room temperature in sealed ampoules. As a result of the reaction was obtained a mixture of organic and inorganic substances, which can be separated with very much difficulty. The reaction of ChATC was performed with the water solution of ammonia. ChATC reacts easily with the concentrated (25%) ammonia solution in water at room temperature, but in this case took place only substitution of the chlorine atom in the α position to the thiocarbonate ring by the group $-NH_2$. The reaction runs with the liberation of heat; ammonium chloride formed by the reaction remains in water solution and the formed amino derivative is easily separable, because it is separated in the form of a crystalline precipitate in satisfactorily pure state, or in the form of insoluble oily layer. The reaction of ChATC runs also easily with water solutions of other substituted amines and in this case are formed with good yield amino derivatives.

Fredga, Arne.
ADAMANTOID COMPOUNDS. Lecture [presented] at the Nordic Chemists' Meeting (no. 10) Stockholm, 17-22 Aug 59. [1962] 22p. 47 refs.
Order from SLA $2.60 62-18069

Trans. of Svensk Kemisk Tidskrift, 1960, v. 72, no. 3, p. 151-165.

DESCRIPTORS: *Hydrocarbons, Synthesis, Heterocyclic compounds, Crystal structure, Molecular structure, Organic compounds, Silicon compounds, Diamonds, Sulfur compounds.

The article presents a review of the work on the hydrocarbon adamantane and its homologues as well as other organic compounds with a urotropin structure. Special attention is devoted to the sulfur-containing ring systems studied in Uppsala since 1947 by the author and his collaborators. (Author)

Goftman, M. V. and Charlampovich, G. D.
STUDY OF THE ANTIOXIDANT PROPERTIES OF THE HIGHER PHENOLS. [1962] 16p.
Order from K-H $20.00 K-H 6457

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1957, v. 30 [no. 3] p. 439-446.

DESCRIPTORS: *Phenols, *Antioxidants.

Korshak, V. V., Bekasova, N. I. and others.
THE COPOLYMERIZATION OF BIS-(ALKYLAMINO) ALKYL- OR ARYLBORON WITH ORGANIC DIISOCYANATES [AND] THE COPOLYMERIZATION OF B-SUBSTITUTED BORAZOLES WITH HEXAMETHYLENE DIISOCYANATE. 30 Mar 62 [17]p. 17 refs.
FTD-TT-62-25.
Order from OTS or SLA $1.60 62-24749

Unedited rough draft trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 4, p. 521-529.

DESCRIPTORS: *Copolymerization, *Metalorganic compounds, *Boron compounds, Nitrogen compounds, Carbon compounds, *Cyanates, *Amines, *Borines, Methanes, Tolylene radicals, Alkyl radicals.

A number of new linear polymers containing boron, nitrogen and carbon in the main chain were obtained by migration copolymerization of diaminoorganoborons with hexamethylene diisocyanate and tôluylene diisocyanate. New organoboron polymers of linear structure containing borazole rings in the main chain are obtained by the copolymerization of B-substituted borazoles with hexamethylene diisocyanate in equimolar ratios. Cross-linked copolymers are formed at equivalent component concentration. (Author)

Korshak, V. V., Gribova, I. A., and Artamonova, T. V.
SYNTHESIS AND POLYMERIZATION OF ARYLPHOSPHONITRILES AND ALKYLPHOSPHONITRILES. [1962] 15p. 7 refs.
Order from OTS or SLA $1.60 62-16843

Trans. of Vysokomol[ekulyarnye] Soedineniya (USSR) 1960, v. 2 [no. 3] p. 377-385.
Another trans. is available from OTS or SLA $1.10 as 61-19740 [1961] 9p. and an abstract trans. from LC or SLA as 60-23844, AID-60-16, 19 July 60, 1p.

DESCRIPTORS: *Phosphonitriles, Synthesis, Polymerization, *Polymers, Phosphorus compounds, Phenyl radicals, Alkyl radicals.

For abstract see Technical Translations 4: 657, 1960.

Makarov, S. P., Yakubovich, A. Ya. and others.
REACTIONS OF POLYFLUORINATED NITROSOALKANES WITH AMINES. 22 Jan 62 [7]p. 14 refs.
Order from OTS or SLA $1.10 62-14985

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 141 [no. 2] p. 357-360.

DESCRIPTORS: *Nitroso radicals, Fluorination, *Amines, Azo radicals, Chemical reactions, *Alkanes

A study was made of the reactions of polyfluorinated nitroso compounds with substances containing the nucleophilic NH_2 group. Polyfluorinated nitrosoalkanes in ether or alcohol medium, react energetically with

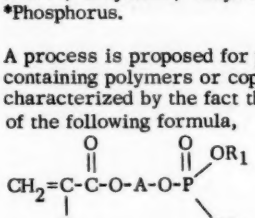
amines, forming resinous products. At low temperatures (-70 to -100°), or in the presence of CH_3COOH, the corresponding azo compounds are obtained. With a decrease in basicity, the reactivity of the amine decreases. (Extracted)

O'Brien, Joseph Lloyd.
PROCESS FOR THE PRODUCTION OF PHOSPHORUS-CONTAINING POLYMERS OR COPOLYMERS.
[1962] 10p.
Order from OTS or SLA $1.10 62-16246

Trans. of German patent 1,100,287, cl. 39c 25/01. internat. cl. C 08 f (R22864 IVb/39c) by Rohm and Haas Co. (U.S.) appl. 8 Mar 58, appl. pub. and issued 23 Feb 61, pat. pub. 24 Aug 61 (priority claimed: U.S. 29 Mar 57).

DESCRIPTORS: *Polymerization, *Copolymerization, Acrylic resins, Phosphoric acids, Carboxylic acids, Esters, Ethylenes, Vinyl radicals, Polymers, *Phosphorus.

A process is proposed for producing of phosphorus-containing polymers or copolymers. The process is characterized by the fact that phosphoric acid esters of the following formula,



(in which R denotes hydrogen, chlorine or a methyl rest, R_1 and R_2 each are an alkyl, chloralkyl or bromoalkyl rest with not more than 4 carbon atoms, and A is an alkylene rest with 2 to 6 carbon atoms of which at least 2 carbon atoms are located between 2 oxygen atoms) are polymerized or copolymerized with each other, or are copolymerized with one or several other, copolymerizable vinylidene compounds.

Okatov, M. A.
THE ELECTROFLUORINATION OF SOME DIBASIC CARBOXYLIC ACIDS AND THE DERIVATION OF 2,2,3,3,-TETRAFLUOROBUTANEDIOL-1,4. [1962] 4p. (1 table omitted) 4 refs.
Order from OTS or SLA $1.10 62-14022

Trans. of Russian language article from unidentified source, n.d.

DESCRIPTORS: Electrolysis, *Fluorination, *Carboxylic acids, Butanes, *Butanols, Synthesis.

Upon the electrolysis of the succinic anhydride, there takes place a simultaneous formation of perfluorosuccinic acid and perfluoropropionic acid. Even in the case of the maximum yield, close to 45% of the succinic anhydridge undergoes complete disintegration; 30% of the anhydride is fluorinated with the disintegration of one carboxylic group, and with the formation of perfluoropropionic acid; and only 25% of the anhydride is fluorinated without disintegration, with the formation of perfluorosuccinic acid. Electrolysis of adipic acid, under analogous conditions, lead to the derivation of perfluorovaleric acid. Upon the electrolysis of an 8%-solution of adipic anhydride there was obtained perfluorovaleric acid. An electrolysis of benzoic acid led to the derivation, with an insignificant yield, of perfluorocyclohexylcarboxylic acid: the electrolysis of benzoyl chloride led to the derivation of a mixture of liquid fluorocarbons. The derivation of fluorine-containing diol was possible by means of the reduction of the dibasic acid or its diether. However, the reduction of the perfluorosuccinic acid with lithium-aluminum hydride, in a solution of sulfuric ether, did not lead to the derivation of diol.

Paraf, J., Desbordes, J. and others.
ADSORPTION OF COMBUSTION TARS BY SUPPORTS IMPREGNATED WITH POLYMERIZED FURFURAL.
[1962] 4p.
Order from K-H $5.00 K-H-8739

Trans. of Acad[emie] Nationale de Méd[ecine, Paris]. Bulletin (France) 1958, ser. 3, v. 142, 17 June, p. 573-575.

DESCRIPTORS: Absorption, *Tars, Combustion, *Furfurals.

Pesin, L. M., Belyanina, E. T., and Pavlovskaya, V. A.
HYDRATION OF CAMPHENE TO ISOBORNEOL.
[1961] 5p. 11 refs.
Order from OTS or SLA $1.10 61-16985

Condensed trans. of Zhurnal Prikladnoi Khimii (USSR) 1943, v. 16, p. 129-133.

DESCRIPTORS: *Sulfonic acids, *Camphene, Hydrates, *Camphanes.

Hydration of camphene in acid medium was investigated in the presence of refined Petrov's kontakt [mixture of sulfonic acids]. An 80% yield of a crystalline product was obtained containing over 60% isoborneol and about 40% camphene. (Author)

Pöthke, W., Gerbert, P., and Müller, E.
ON THE CONDITIONS OF PRECIPITATION OF ALKALOIDS AND SYNTHETIC BASES WITH REINECKE SALT. [1962] 13p.
Order from K-H $16.25 K-H 11627-e

Trans. of Pharmazeutische Zentralhalle [für Deutschland] (East Germany) 1961, v. 100, no. 7, p. 321-328.

DESCRIPTORS: Precipitation, *Alkaloids, *Hydroxides, Chromates, Ammonium radicals, Thiocyanates

Rudenko, A. P., Balandin, A. A., and Zabolotnaya, M. M.
DEMETHANATION DURING FORMATION OF CARBONACEOUS SUBSTANCE AND RESIN FROM ETHYLENE AND ACETYLENE. [1962] 7p. 10 refs.
Order from OTS or SLA $1.10 62-16563

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2 [no. 3] p. 440-445.

DESCRIPTORS: *Carbon, *Resins, *Ethylenes, *Acetylenes, Pyrolysis, Silicon, Gels, Condensation.

Carbon- and resin formation rate and composition of the formed products were studied under conditions of ethylene and acetylene pyrolysis on silica gel at 450-1,000 C and atmospheric pressure. A parallelism between the sense of changes in methane and hydrogen content of gaseous pyrolysis products and the rates of resin- and carbon formation was established. Irregularities of these rising rates were noted and in the change of composition of the gaseous products at increase of pyrolytic temperature as well; they should be interpreted as a manifestation of two mechanisms of carbon formation (low- and high temperature mechanisms). Possible schemes of low temperature mechanism of resin- and carbon formation were proposed, admitting the existence of demethanation and dehydrogenation reactions under form of separate stages of ethylene and acetylene polycondensation to carbonaceous substance and resins.

Schmitz, Ernst and Ohme, Roland.
CYCLIC DIAZO COMPOUNDS. I. PREPARATION AND REACTIONS OF DIAZIRINES (Cyclische Diazoverbindungen, I. Herstellung und Umsetzungen von Diazirinen). [1962] [21]p. (foreign text included) 23 refs.
Order from SLA $2.60 62-16556

Trans. of Chem[ische] Ber[ichte] (West Germany) 1961, v. 94, no. 8, p. 2166-2173.
Also available without foreign text from SLA $1.60 as 62-10203 [1961] 13p.

DESCRIPTORS: *Cyclohexanones, Hexanones, *Azo radicals, *Ethylenimines, Imines, *Hydrazones, Acetones, Acetophenones, Grignard reagents, Chemical reactions, Synthesis, Phenones.

For abstract see Technical Translations 7: 619, 1962.

Schulz, R. C., Kovacs, J., and Kern, W.
SOLUTION EXPERIMENTS WITH REDOX POLYMERIZATES OF ACROLEIN. [1962] 3p. 8 refs.
Order from SLA $1.10 62-16963

Trans. of Markromolekulare Chemie (Switzerland) 1962, v. 52, p. 236-238.

DESCRIPTORS: *Acroleins, *Polymers, Polymer solutions, Polymerization, Oxidation-reduction reactions.

Shuikin, N. I., Timofeeva, E. A., and Kleimenova, V. M.
DEHYDROGENATION OF n-ALKANES ON THE K-5 CATALYST. [1962] [6]p. 5 refs.
Order from OTS or SLA $1.10 62-14814

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961, no. 4, p. 653-657.

DESCRIPTORS: *Pentanes, *Hexanes, *Heptanes, *Octanes, *Decanes, Dehydrogenation, Catalysts.

The dehydrogenation reaction of C_5-C_{10} n-alkanes and also of n-hexadecane and cyclohexane was investigated at 500 C and space velocity 2, 1 $hour^{-1}$ in the presence of catalyst K-5. Some 8-12% of corresponding alkenes is contained in the catalyzates of the n-alkanes, produced under these conditions. The n-hexadecane undergoes a considerable cracking. This catalyst has small aromatizing ability and isomerizing activity. (Author)

Sicot, Francois and Sicot, Jacques-Michel-Joseph.
NEW PRODUCT WITH SILICATE BASE, USABLE, IN PARTICULAR, AS A FERTILIZER AND DETERGENT. [1954] 2p.
Order from OTS or SLA $1.10 62-16388

Trans. of French patent 670, 881, gr. 1, cl. 2, appl. 27 June 28, released 26 Aug 29, pub. 5 Dec 29.

DESCRIPTORS: Silicates, *Fertilizers, *Detergents.

Smit, V. A., Semenovskii, A. V. and others.
CYCLIZATION OF ISOPRENOID COMPOUNDS. IV. LOW-TEMPERATURE CYCLIZATION OF GERANIC ACID AND ITS ESTER. [1962] 15p. (1 fig. omitted) 9 refs.
Order from OTS or SLA $1.60 62-18064

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1962, no. 2, p. 312-317.

DESCRIPTORS: *Ionones, *Pentadienes, *Esters, Methyl radicals, Monocyclic compounds, Chromatographic analysis.

On the example of geranic acid and its ester, the applicability of a method of low-temperature cyclization for isoprenoid acids is demonstrated. The influence of conditions on the course of the reaction of cyclization of the methyl ester of geranic acid is studied and hypotheses are proposed as to the nature of the intermediate products. α-Cyclogeranic acid and its ester are capable of being converted into the corresponding β isomers only with difficulty. (Author)

Solomin, A. V., Suvorov, B. V., and Rafikov, S. R.
OXIDATION OF ORGANIC COMPOUNDS. XVI. INFLUENCE OF THE SIDE CHAIN STRUCTURE ON THE VAPOR-PHASE OXIDATION OF MONOALKYLBENZENES IN THE PRESENCE OF VANADIUM CATALYSTS. [1962] 10p. 4 refs.
Order from OTS or SLA $1.10 62-18071

Trans. of Akad[emiya] Nauk Kazakh[skoi] SSR [Alma Ata]. Inst[itut] Khim[icheskikh] Nauk. Trudy, 1958, v. 2, p. 182-187.

DESCRIPTORS: *Organic compounds, Oxidation, *Benzenes, Toluenes, Cumenes, Styrenes, Vapors, *Vanadium catalysts, Molecular structure, Alkyl radicals.

The vapor-phase oxidation of toluene, ethylbenzene, cumene, styrene and α-methylstyrene by moist air over different mixed vanadium catalysts was studied.

It was shown that the oxidation is accompanied by the destruction of the initial hydrocarbon molecule, whereby many intermediary products are formed. Together with the main reactions, whereby benzoic acid is formed as an intermediary product, side reactions also occur with the splitting off of the α-C atom. The number of these side reactions depends on the structure of the initial alkylbenzene and the intermediary products, and also on the conditions of the process. A schematic representation of the oxidation is proposed in which the dependence of the formation of the main reaction products on the structure of the oxidized substances is looked upon from the point of view of the modern peroxide theory of oxidation and the theory of chain-radical processes. (Author)

Sorokin, Yu. A. and Pshezhetskii, S. Ya.
FORMATION OF HYDRAZINE FROM LIQUID OR SOLID AMMONIA BY GAMMA RADIATION. Jan 62, 3p. 1 ref.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 138, no. 4, p. 880-[883].
Another trans. is available from OTS or SLA $1.10 as 62-32510, FTD-TT-62-838, 22 June 62 [8]p.

DESCRIPTORS: *Hydrazines, Synthesis, *Ammonia, *Radiochemistry, Gamma rays, *Chemical engineering.

Timofeeva, E. A., Shuikin, N. I. and others.
DEHYDROGENATION OF HYDROCARBONS ON ALUMINA-CHROMIA AND ALUMINA-CHROMIA-POTASSIA CATALYSTS, PREPARED UNDER DIFFERENT CONDITIONS. [1962] 8p. 17 refs.
Order from OTS or SLA $1.10 62-16635

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1960, no. 2, p. 292-299.
Another trans. is available from ATS $8.00 as ATS-12M44R [1960] 8p.

DESCRIPTORS: *Hydrocarbons, Pentanes, Hexanes, Cyclohexanes, Dehydrogenation, *Catalysts, Aluminum compounds, Oxides, Chromium catalysts, Potassium compounds.

The effect of perparation methods of the alumina-chromia and alumina-chromia-potassia catalysts on their dehydrogenating and dehydrocyclizing activity was investigated. The investigated preparation methods are the least affecting the course of isopentane dehydrogenation reaction. In n-hexane dehydrocyclization reaction this relationship appears to a stronger degree. The course of cyclohexane dehydrogenation reaction is still more dependent on the methods of catalysts preparation. Addition of K_2O to alumina-chromia catalysts, whatever the method of introduction, raises their activity and stability in the reactions of isopentane and cyclohexane dehydrogenation, and also in the reaction of n-hexane dehydrogenation, while, simultaneously, it acts negatively on the increase of yields in unsaturated hydrocarbons from n-hexane. The alumina-chromia catalyst, prepared by impregnation of aluminum oxide with a solution of ammonium bichromate is the best of all investigated catalysts from standpoint of production of maximal yields in hexenes and minimal yields in benzene (23% of unsaturated hydrocarbons and 16% of benzene). (Author)

Timofeeva, E. A., Smirnov, V. S., and Bogomolov, V. I.
DEHYDROGENATION OF n-OCTANE AND OF THE SYNTHINE FRACTION 250-320°C IN THE PRESENCE OF ACTIVATED CHARCOAL. [1962] 8p. 15 refs.
Order from OTS or SLA $1.10 62-16559

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961, no. 7, p. 1320-1325.

DESCRIPTORS: *Octanes, Hydrocarbons, Fractionation, *Dehydrogenation, Charcoal, Activated carbon, Catalysts, Catalysis, Raman spectroscopy.

The reaction of dehydrogenation of n-octane and of the synthine fraction 250-320°C was investigated in the presence of activated charcoal. Possibility of a practically selective n-octane dehydrogenation with a 9% octenes yield was shown in the presence of carbon. No octene-1 was detected by Raman spectra of the formed octenes. Caustic promotion of the carbon augments cracking of the synthine fraction increasing formation of alkenes. (Author)

Vasil'ev, S. V.
ACCION DEL PEROXIDO DE NITROGENO SOBRE EL ACIDO UNDECILENICO (Deistvie Azotnovatoi Okisi na Undetsilenovuyu Kislotu) (Action of Nitrogen Peroxide on Undecylenic Acid). 9p. 6 refs.
CID: 62-80. (text in Spanish).
Order from OTS or ETC $0.95 62-26280

Trans. of #Zhurnal Obshchei Khimii (USSR) 1956 [v. 26] no. 3, p. 712-714.

DESCRIPTORS: Nitrogen compounds, *Carboxylic acids.

Vdovichenko, V. T., Galenko, N. P. and Larinov, A. V.
CONVERSION DEL METANO MEDIANTE EL ANHIDRIDO SULFUROSO A SULFUOR DE CARBONO (Konversiya Metana Seznistym Angidridom do Serugleroda) (Conversion of Methane into Carbon Sulphide with Sulphur Dioxide). 10p. 10 refs.
CID: 62-72. (text in Spanish).
Order from OTS or ETC $1.00 62-26272

Trans. of #Zhurnal Prikladnoi Khimii, (USSR), 1959, [v. 32] no. 2, p. 347-350.

DESCRIPTORS: *Methane, Oxydation, Sulphur compounds, Dioxides, *Carbon compounds, Sulfides.

Vladzimirskaya, E. V.
SEUDOTIOHIDANTOINAS Y TIOHIDANTOINAS (Psevdotiogidantoiny i Tiogidantoiny) (Pseudothiohydantoins and Thiohydantoins). 7p. 16 refs.
CID: 62-71. (text in Spanish).
Order from OTS or ETC $0.90 62-26271

Trans. of #Zhurnal Obshchei Khimii (USSR) 1955 [v. 25] no. 12, p. 2255-2257.

DESCRIPTORS: *Hydantoins.

Volynkin, N.
METODO DE SINTESIS DE LA VANILLINA Y DE OTROS OXIALDEHIDOS (Metod Sinteza Vanilina i Drugikh Oksial'degidov) (Synthesis of Vanillin and of Other Oxyaldehides). 7p. CID: 62-78. (text in Spanish).
Order from OTS or ETC $0.90 62-26278

Trans. of Zhurnal Prikladnoi Khimii (USSR) 1938 [v. 11] no. 3, p. 423-425.

DESCRIPTORS: *Benzaldehydes, Synthesis.

Physical Chemistry

Abrikosov, N. Ch. and Bankina, V. F.
UNTERSUCHUNG DES ZUSTANDSDIAGRAMMS DES SYSTEMS Bi-Te (Examination of the Phase Diagram of the System Bi-Te). (text in German).
Order from T. I. B. $1.85

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1958, v. 3, no. 3, p. 659-667.
Other translations are available in English from OTS $3.75 in AEC-tr-4451 [1961] 426p.; and from LC or SLA mi$1.80, ph$1.80 as 60-10938; mi$11.10, ph$37.80 on 60-13423, F-TS-9531 [1959] [246]p.

DESCRIPTORS: *Bismuth, *Tellurium, Metallic compounds.

Akhundov, G. A. and Abdullaev, G. B.
UBER DIE DIFFUSION VON KADMIUM UND ZINN IN EINER Cd-Sn-LEGIERUNG. (On the Diffusion of Cadmium and Tin in a Cd-Sn-alloy). (text in German).
Order from T. I. B. $1.40

Trans. of Akademiya Nauk Azerbaidzhanskoi SSR [Baku]. Doklady, 1958, v. 14, no. 2, p. 103-104.

DESCRIPTORS: Diffusion, *Cadmium, *Tin, Alloys.

Antipin, L. N. and Khudyakov, A. N.
INVESTIGATION OF THE ANODIC PROCESS IN AN ALUMINUM BATH. [1961] 10p. 9 refs. MDF A 132.
Order from OTS $0.50 62-11356

Trans. of #Zh[urnal] Prikl[adnoi] Khimii (USSR) 1956, v. 29, p. 908-914.

DESCRIPTORS: Electrolysis, *Aluminum, *Anodes, Polymerization, Electrochemistry, Gases.

An experimental study was made of the dependence of the anodic gas composition and the magnitude of the polarization on the current density. It was established that the variation of the gas composition on the anode of an aluminum bath does not proceed monotonically as the current density varies. There are two inflection points at D = 0.1 A/cm^2 and at D = 0.3 A/cm^2 on the curve expressing this dependence. Breakpoints, corresponding to these same current densities, are found on the anode polarization curve. The dependence of the carbon anode potential on the current density is described well by the equation of a gaseous oxygen electrode.

Atroshenko, V. I. and Gavrya, N. A.
INFLUENCIA DE LOS GASES INERTES EN LA SINTESIS DEL AMONIACO (Vliyanie Inertnykh Gazov na Sintez Ammiaka) (Influence of Inert Gases in Ammonia Synthesis). 15p. 14 refs. CID: 62-21. (text in Spanish).
Order from OTS or ETC $1.20 62-26221

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1957, v. 30, no. 12, p. 1741-1746.
Another trans. is available in English from ATS $9.70 as ATS-08L30R [1959] 7p.

DESCRIPTORS: *Ammonia, *Synthesis, Rare gases.

Balazsovics, G.
HEAT MIGRATION THROUGH THE OUTER METAL OXIDE LAYER DURING THE DISSOCIATION OF LUMPY CARBONATES. [1960] [17]p. 8 refs.
Order from SLA $1.60 62-16882

Trans. of Radex-Rundschau (Austria) 1959, Dec, p. 714-721.
Another trans. is available from BISI £3 15s as BISI-1682 [1960].

DESCRIPTORS: *Carbonates, Decomposition, Heat transfer, Oxides, Metals.

For abstract see Technical Translations 4: 17, 1960.

Burgdorf, Kurt.
PROCESS FOR THE PRODUCTION OF CONDENSATION PRODUCTS FROM HEXAMETHYLENETETRAMINE AND ESTERS OF MONOVALENT INORGANIC ACIDS. [1962] 6p.
Order from OTS or SLA $1.10 62-16274

Trans. of German patent 876,854, cl. 12p, gr. 15, B 5872 IVc/12p, by Böhne Fettchemie G. m. b. H., pat. from 31 Mar 43 (period 8 May 45-7 May 50 not included in term of pat.) appl. promulgated 29 May 52, grant promulgated 8 Jan 53, pub. 19 Feb 53.

DESCRIPTORS: *Acids, *Esters, *Amines, *Cyclohexanes, Hexanes, *Condensation reactions, Dyes, Colloids, Corrosion inhibition.

The process is characterized by the utilization of solvents which contain hydroxyl groups or ether-like bound oxygen or both and limited quantities of water, preferably about 0.1 to 40%.

Bykhovskii, V. K. and Temkin, O. N.
PROBLEM ON MECHANISM OF HOMOGENOUS CATALYTIC ACTIVATION OF MOLECULAR HYDROGEN [K Voprosu o Mekhanizme Gomogennoi Katalicheskoi Aktivatsii Molekulyarnogo Vodoroda]. [1962] 6p. 28 refs.
Order from OTS or SLA $1.10 62-16566

Trans. of Kinetika i Kataliz (USSR) 1960, v. 1 [no. 3] p. 374-378.
Another trans. is available from OTS or SLA $1.10 as 61-23640, RTS-1843, June 61 [8]p.

DESCRIPTORS: *Hydrogen, Molecules, *Catalysts, Chemical reactions.

For abstract see Technical Translations 6: 335, 1961.

Collongues, R. and others.
ON THE EQUILIBRIUM DIAGRAMS OF THE SYSTEMS ZIRCONIA/RARE EARTHS. Oct 61, 2300 words.
Order from HB $6.90 HB-5260

Trans. of Soc[iété] Chim[ique de] France. Bulletin, 1961 [no. 1] p. 70-74.

DESCRIPTORS: *Chemical equilibrium, *Zirconium compounds, Oxides, *Rare earths, *Molybdenum Solids, Precipitation, Dilatometers.

Drozdov, N. P. and Zel'dovich, Ya. B.
DIFFUSION PHENOMENA AT THE LIMITS OF FLAME PROPAGATION: EXPERIMENTAL STUDY OF INACTIVATION OF EXPLOSIVE MIXTURES CONTAINING CARBON MONOXIDE [Diffuzionnye Yavleniya u Predelov Rasprostraneniya Plameni: Eksperimental'noe Issledovanie Flegmatizatsii Vzryvchatykh Smesei Okisi Ugleroda]. [1962] 3p. 3 refs.
Order from OTS or SLA $1.10 62-16812

Abstract trans. of Zhurnal Fizicheskoi Khimii (USSR) 1943, v. 17, no. 3, p. 134-144.
A complete trans. is available from SLA as RT-973, 20p.

DESCRIPTORS: *Flame propagation, *Diffusion, Chemical analysis, *Carbon compounds, *Monoxides, Mixtures, Explosives.

Efremova, G. D. and Leont'eva, G. G.
THE SOLUBILITY OF MELAMINE IN SOLUTIONS OF DICYANDIAMIDE IN LIQUID AMMONIA. [1961] [5]p. 3 refs.
Order from OTS or SLA $1.10 62-10248

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1960 [no. 8] p. 626-627.

DESCRIPTORS: *Melamine, Solubility, Heat of solution, *Ammonia, *Cyanamides.

Experiments showed that the solubility of melamine depends on the concentration of dicyandiamide in liquid ammonia. The fact that the solubility of melamine in solutions of dicyandiamide in liquid ammonia can increase or decrease with increasing temperature, depending on the concentration of dicyandiamide in the solution, indicates that the heat of solution changes sign as the concentration of dicyandiamide in the solution increases.

Fastovskii, V.I. and Krestinskii, Yu. A.
SOLUBILITY OF ARGON ON LIQUID OXYGEN. [1962] 3p. 4 refs.
Order from OTS or SLA $1.10 62-14638

Trans. of Zhur[nal] Fizi[cheskoi] Khim[ii] (USSR) 1942, v. 16, no. 3/4, p. 148-151.

DESCRIPTORS: *Argon, Solubility, *Liquefied gases, Oxygen.

The solubility of solid argon in liquid oxygen was investigated tensimetrically at 72.8-79.09° K, and a considerable deviation of the experimental data from ideal solubility established. An empirical equation was derived permitting calculation of the solubility of argon in liquid oxygen. (Author)

Fastovskii, V. G. and Krestinskii, Yu. A.
SOLUBILITY OF SOLID METHANE IN LIQUID NITROGEN AND OXYGEN [Rastvorimost' Tverdogo Metana v Zhidkom Azote i Kislorode]. [1962] 3p. 1 ref.
Order from OTS or SLA $1.10 62-16808

Abstract trans. of Zhurnal Fizicheskoi Khimii (USSR) 1941, v. 15, no. 4, p. 525-531.
A complete trans. is available from LC or SLA mi$2.40, ph$3.30 as 60-23516, 7 Aug 60 [13]p.

DESCRIPTORS: *Methanes, Solubility, *Liquid oxygen, Nitrogen, *Liquified gases, *Solidified gases, Solvent extraction, Heat of fusion.

Gal'chenko, G. L., Timofeev, B. L., and Skuratov, S. M.
DETERMINATION OF THE HEAT OF FORMATION OF DECABORANE. 11 May 62 [7]p. 7 refs.
Order from OTS or SLA $1.10 62-18029

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 142 [no. 5] p. 1077-1080.

DESCRIPTORS: *Thermochemistry, *Decaboranes, Pyrolysis, *Heat of formation, Determination, Calorimeters.

Gerber, M. I., Teodorovich, V. P. and Tusharina, A. D.
ESTUDIO DE LA VELOCIDAD DE ABSORCION DEL SULFURO DE HIDROGENO POR SOLUCIONES ARSENIATO-SODICAS (Issledovanie Skorosti Pogloshcheniya Serovodoroda Mysh'yakogo-Sodovymi Rastvorami) (Study of Hydrogen Sulphide Adsorption by Sodium-Arseniate Solutions). 10p. 2 refs. CID:62-91. (text in Spanish).
Order from OTS or ETC $1.00 62-26291

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1958, [v. 31] no. 11, p. 1624-1627.

DESCRIPTORS: *Hydrogen compounds, *Sulfides, *Absorption. Arsenic compounds.

Ginsburg, V. A., Yakubovich, A. Ya. and others.
HETEROLYTIC CONVERSIONS OF POLYFLUORINATED AZOALKANES. 4 Apr 62 [7]p. 3 refs.
Order from OTS or SLA $1.10 62-14994

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 142 [no. 2] p. 354-357.

DESCRIPTORS: Polymers, Fluorides, *Fluorination, *Azo compounds, Methanes, Benzenes, Carboxylic acids, Decomposition, Chemical reactions, Synthesis.

See also 62-14992

Glazkova, A. P. and Tereshkin, I. A.
PRESSURE DEPENDENCE OF THE BURNING VELOCITY OF EXPLOSIVES. [1962] 12p. (14 figs. 1 table omitted) 4 refs.
Order from OTS or SLA $1.60 62-14212

Trans. of #Zhurnal Fizicheskoi Khimii (USSR) 1961, v. 35, no. 7, p. 1622-1628.

DESCRIPTORS: *Explosives, Tetryl, Ammonium picrate, RDX, Nitroglycerin, Amatol, Powders, Combustion, Velocity, Pressure.

The burning velocity of trotyl, picric acid, Hexogen, TEN and DINA increases linearly with pressure. The burning velocity of tetryl, nitroglycerine powder and ammatol 80:20 at moderately increased pressures is expressed by equation (2), and at high pressures by equation (1). The variation of the burning velocity of gunpowder in the entire range of pressures studied is expressed by equation (2). A pressure increase to 1000 atm does not, in itself, disturb the stability of the burning process even for such powerful explosives as TEN and Hexogen. (Author)

Gol'dberg, N. A. and Znamenskii, Yu. D.
CINCETICA DE LA NITROGENACION DEL CARBURO DE CALCIO (Kinetika Zaotirovaniya Karbida Kal'tsiya) (Kinetics of Calcium Carbide Nitrogenation). 8p. 10 refs. CID: 62-94. (text in Spanish).
Order from OTS or ETC $0.90 62-26294

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 120, no. 1, p. 148-150.
Another trans. is available in English from CB $5.00.

DESCRIPTORS: *Calcium, *Carbides, Nitrogen

Gromov, L. A. and Baranaev, M. K.
ON THE STRENGTH OF LIQUID UNDER HYDROSTATIC TENSION. 23 Mar 62 [5]p. 8 refs. JPRS: 13149.
Order from OTS or SLA $1.10 62-23581

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Khimiya i Khimicheskaya Tekhnologiya (USSR) 1961, v. 4, no. 2, p. 320-321.

DESCRIPTORS: *Liquids, Hydrostatic pressure, Pressure, Rupture, Molecules, Molecular structure.

Karmilova, L. V., Enikolopyan, N. S., and Nalbandyan, A. B.
THE PROBLEM OF DEGENERATIVE BRANCHING. II. THE ROLE OF FORMALDEHYDE IN THE OXIDATION OF METHANE (K Voprosu o Vyrozhdennom Razvetvlenii. II. Rol' Formal'degida pri Okislenii Metana). July 61 [20]p. 19 refs. RTS 1882.
Order from OTS or SLA $1.60 61-27302

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1957, v. 31, no. 4, p. 851-864.

DESCRIPTORS: *Reaction kinetics, Hydrocarbons, Molecular structure, Methanols, *Formaldehyde, *Methanes, Oxidation.

Theoretical conclusions relating to the kinetics of reactions proceeding with degenerate branching at an intermediate product are confirmed by data for thermal and NO-catalysed oxidation of methane at high and low temperatures. Four independent methods (carbon monoxide build-up, pressure change, heat liberation and kinetics of methane consumption) revealed a change in mechanism during the course of the reaction from a branched-chain type (characterised by autoacceleration) to a pseudo-unbranched type (characterised by constant rate). It was experimentally confirmed that establishment of a constant rate of oxidation of the original hydrocarbon is associated with attainment of a steady-state concentration of the intermediate product responsible for degenerate branching. A quantitative method established that formaldehyde is the sole product involved in degenerate chain-branching during methane oxidation. The other intermediate product - methyl alcohol - had no effect on degenerate branching. Shortening of the induction period of methane oxidation by large amounts of methyl alcohol (10 times larger than the quantity actually formed during the reaction) is the consequence of supplementary formation of branching product (formaldehyde) and of accelerated accumulation of optimum concentrations of the latter. (Author)

Kazanskii, V. B. and Pecherskaya, Yu. I.
INVESTIGATION OF ALUMINA-CHROMIA CATALYSTS BY THE METHOD OF PARAMAGNETIC ELECTRON RESONANCE. [1962] 10p. 17 refs.
Order from OTS or SLA $1.10 62-16562

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2, [no. 3] p. 454-461.

DESCRIPTORS: *Paramagnetic resonance, Catalysis, *Aluminum compounds, Oxides, *Chromium compounds, Spectrographic analysis, Lattices.

It is shown that on incompletely reduced alumina-chromia catalysts a surface phase of pentavalent chromium compound is formed. (Author)

Kiessling, Hans Joachion.
METHOD FOR THE PREPARATION OF p-TOLUIC ACID CHLORIDE. [1962] 3p.
Order from OTS or SLA $1.10 62-16269

Trans. of German patent 1,039,053, by Deutsche Solvay-Werke G.m.b.H., 26 Feb 59.

DESCRIPTORS: *Chlorides, *Benzoic acids, *Methyl radicals, Synthesis.

A method is claimed for the preparation of toluic acid chloride in which 1 mole of toluic aldehyde at 100-150°C, preferably at 120-140°C, is treated with 1 to 1.2 moles of chlorine during a little less than 3 hours.

Kondrikov, B. N.
THERMODYNAMIC DECOMPOSITION OF GLYCOL-DINITRITE (O Termicheskom Rasnade Glikol'dintrita) tr. by Sergei Shewchuck. [1961] 5p. (foreign text included) 5 refs.
Order from OTS or SLA $1.10 UCRL-Trans-525(L)

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1958, v. 32 [no. 5] p. 1175-1176.

DESCRIPTORS: *Ethylenes, *Nitrides, *Pyrolysis, Decomposition.

Kottmann, Alfons, Lohmann, Paul, and Kampmann, Friedrich.
PROCESS FOR THE PREPARATION OF PRIMARY ALKYL BROMIDES. [1962] 3p.
Order from OTS or SLA $1.10 62-16277

Trans. of German patent 1,051,265, C 14172 IVb/12 o, cl. 12 o 2/01, internat. cl. C 07 c, by Chemische Werke Bergkamen Aktiengesellschaft, appl. 29 Dec 56, appl. pub. and issued 26 Feb 59.

DESCRIPTORS: *Bromides, *Alkyl radicals, Synthesis, Hydrogen compounds, Ethylenes, Hydrocarbons.

A process is claimed for the preparation of primary alkyl bromides by the addition of hydrogen bromide to olefins. The process is characterized by the fact that α-olefin-containing hydrocarbon mixtures are used as initial substances which were produced by the thermal cleavage of crude paraffin wax originating from the Fischer-Tropsch synthesis.

[Krzikella, H. and Merkel, Kark].
[METHOD FOR THE PRODUCTION OF BIS- AND POLYCHLOROCARBONIC ESTERS OF POLYVALENT ALCOHOLS (Verfahren zur Herstellung von Bis- und Polychlorkohlinsäureestern Mehwertiger Alkohole)]. [1962] 2p.
Order from OTS or SLA $1.10 62-16275

Trans. of German patent 800,662, by Badische Anilin- und Soda Fabrik, A.G., 1950.

DESCRIPTORS: *Alcohols, *Chlorides, *Carbonates, *Esters, Synthesis.

Leitman, Ya. I. and Diyarov, I. N.
SULFONATION OF HEMIMELLITENE (1, 2, 3-TRIMETHYLBENZENE) AND HYDROLYSIS OF ITS SULFONIC ACID: A KINETIC STUDY. Jan 62, 4p. 10 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1961, v. 34, no. 9, p. 1920ff.

DESCRIPTORS: *Benzenes, Methyl radicals, *Sulfonation, Hydrolysis, *Sulfonic acids, Reaction kinetics, *Chemical engineering.

Mann, Hans-Joachim.
METHOD FOR THE PREPARATION OF PENTAERYTHRITOL DICHLOROHYDRIN. [1962] 4p. 2 refs.
Order from OTS or SLA $1.10 62-16273

Trans. of German patent 955,234, cl. 12o, gr. 5 04, internatl. cl. C 07c, D 17128 IVb/120, pat. from 25 Feb 54, appl. pub. 28 June 56, grant pub. 13 Dec 56, grant pub. 13 Dec 56, issued 3 Jan 57.

DESCRIPTORS: *PETN, *Halohydrins, Synthesis.

A method is proposed for the production of pentaerythritol dichlorohydrin by conversion of pentaerythritol with hydrogen chloride at elevated temperatures and under pressure. The method is characterized by the fact that a minimum of 2 mols hydrogen chloride are used per 1 mol of pentaerythritol and that the conversion is conducted at temperatures between 120 to 160° in the presence of an inert organic solvent for pentaerythritol dichlorohydrin.

Markov, B., Shcherbakov, I., and Kalitova, V.
TO THE QUESTION OF THE ELECTROLYSIS OF FUSED CARNALLITE DEPENDENCE OF THE CURRENT OUTPUT BY THE MAGNESIUM ON THE MAGNESIUM CHLORIDE CONTENT IN THE MELT. [1961] 8p. 8 refs. MDF M-113.
Order from OTS $0.50 62-11369

Trans. of Zh[urnal] Fiz[icheskoi] Khim[ii] (USSR) 1940, v. 14, no. 2, p. 220-224.

DESCRIPTORS: Electrochemistry, *Fused materials, *Electrolysis, Potassium compounds, Magnesium compounds, Chlorides, Electrolytes, Magnesium, Precipitation, Cathodes (Electrolytic cells).

A determination is made of the current output during the precipitation of magnesium from a fused system of $KCl \cdot NaCl + nMgCl_2$ with a variation of the $MgCl_2$ content of from 0 to 6 mol.-% and a current density of from 0.1 to 0.9 amp/sq cm. A noticeable deposition of the alkali metal occurs during the electrolysis of the fused carnallite at average current densities with a significant impoverishment of the electrolyte by magnesium chloride (several percent). Hence, the magnesium current output drops sharply to zero under further extraction. The current output (a_{Mg}) varies linearly for the average current densities (0.1 to 0.3 amp/sq cm) depending on the $MgCl_2$ content in the melt. A parallel is noticed between the wetting of the cathode by the magnesium and the current density. Lower current densities contribute to the formation of finely-dispersed metal. (Author)

Myuller, R. L., Markova, T. P., and Repinskii, S. M.
DISSOLUTION KINETICS OF GERMANIUM IN NITRIC ACID. [1962] [27]p. 27 refs.
Order from OTS or SLA $2.60 62-14471

Trans. of Leningr[ad] U. Vestnik (USSR) 1959 [v. 14] no. 16 [Seriya Fiziki i Khimii, no. 3] p. 106-118. Another trans. is available from OTS or SLA $1.60 as 62-23096, MDF M-132 [1960] 15p.

DESCRIPTORS: *Germanium, Oxidation Solubility, *Nitric acid, Reaction kinetics.

The dependence of the dissolution rate of germanium in solutions of nitric and nitrous acids on the temperature and stirring of the solution is investigated. Conclusions are drawn in favor of limited heterogeneous chemical oxidation reactions of germanium and hydration of oxidation products. These reactions are accompanied by diffusion of molecules of the oxidizer from the bulk of the solution to the boundary surface of germanium and diffusion of hydrated oxidation products of germanium in the opposite direction. These processes are considerably accelerated when the solution is stirred. The existence of an upper ($p_w \cong 7$) and a lower ($p_w \cong 10$) limit of the rate of oxidation dissolution is established experimentally and formulated theoretically. The upper limit is determined by the limiting value of the diffusion rate of hydrated oxidation products of germanium into the bulk of the solution. The lower limit corresponds to the limiting rate of diffusion of the molecular oxygen of air through the solution to the germanium surface. The limiting values of p_w decrease slightly when the solution is stirred. The temperature coefficient of the dissolution rate of germanium in the transition region between the limiting values $7 \leq p_w \leq 10$ is slightly elevated because the rate of accumulation of the reduction products of nitric acid increases with temperature; these products catalytically accelerate the oxidation reaction of germanium with nitric acid.

Okuda, Michio.
ULTRAVIOLET ABSORPTION SPECTRUM OF PYRIDINE ADSORBED ONTO THE SURFACE OF SILICA GEL. Rept. no. 4 of Spectroscopic Studies on Adsorption. [1962] 12p. 12 refs.
Order from SLA $1.60 62-18035

Trans. of Nihon Kagaku Zasshi (Japan) 1961, v. 82, no. 10, p. 1287-1290.

DESCRIPTORS: *Pyridines, Molecules, *Ultraviolet spectroscopy, Adsorption, Silica, *Gels, Surface properties, *Phase studies, Vapors, Liquids.

The ultraviolet absorption spectra of pyridine adsorbed from vapor-phase and from liquid-phase onto silica gel, were measured. The adsorption tablet method was used for the former, and the Nujol method, whereby the sample was blended with liquid paraffin, then sandwiched between quartz plates, then measured, was used for the latter. The absorption spectrum of pyridine which had adsorbed from the liquid-phase demonstrated a sharp vibrating structure, and it resembled the absorption spectrum of a molecular compound of pyridine and trichloroacetic acid. It was estimated from this result that pyridine had reacted with acid points on the surface and that the pyridinium ion and the anion part of the adsorption surface had formed an ion pair. By vapor-phase adsorption, a broad absorption band with an absorption maximum at 256 mμ was presented, and it could be estimated that the pyridine molecules had mainly formed hydrogen bonds with the surface of the adsorbent. The difference in these states of adsorption between liquid-phase adsorption and vapor-phase adsorption was caused by a difference in the quantity adsorbed. When the quantity adsorbed became greater in vapor-phase adsorption, the 0-0 absorption band became the absorption maximum. As with benzene, this phenomenon could be explained by interaction between adsorbed molecules. (Author)

Perec, Mieczyslaw.
THE ELECTROREDUCTION OF URANIUM (VI) COMPOUNDS IN CARBONATE SOLUTIONS. 27 Nov 61 [18]p. JPRS: 11292.
Order from OTS or SLA $1.60 62-19684

Trans. of Nukleonika (Poland) 1961, v. 6, no. 5, p. 357-369.

DESCRIPTORS: *Uranium compounds, Carbonates, Solutions, Reduction, *Electrochemistry, Mercury electrodes, Reaction kinetics.

Experiments established that the rate of reduction of the uranyl carbonate ion to black uranium oxide on the lead cathode is braked by the increase of the concentration of carbonates. The rate of this reaction increases with the increase of the concentration of OH^- ions and with the rise of temperature. The black uranium oxide is composed principally of U_3O_8 with a small content of free UO_2. On the dropping mercury cathode the process of reduction of U(VI) to U(IV) depends to an insignificant degree on the concentration of carbonates and OH^- ions. These observations indicate that as a result of an electrochemical reduction on the mercury dropping cathode a soluble uranium carbonate ion is obtained. The CO_3^{2-} and OH^- ions, playing the role of conductive salts, do not have any major influence on the process of the above reactions. The precipitation of uranium in the form of oxide U_3O_8, proceeds as a result of the reaction between compounds of U(IV) and U(VI). At an elevated temperature the reactions between the OH^- ions, which appear in great concentration in the cathode layer, and uranyl carbonate ions appear possible. (Author)

Rozental', K. I. and Veselovskii, V. I.
STUDY OF THE MECHANISM AND THE KINETICS OF THE REACTION OF ELECTROCHEMICAL OXIDATION BY THE METHOD OF ANODIC POLAROGRAPHY ON THE PLATINUM ELECTRODE. [1962] 13p. (11 figs. omitted) 10 refs.
Order from OTS or SLA $1.60 62-16539

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1953, v. 27, no. 8, p. 1163-1171.

DESCRIPTORS: *Electrochemistry, *Platinum electrodes, Oxidation, *Polarographic analysis, Reaction kinetics.

There is developed a new method for taking anodic polarograms on the rotating platinum microelectrode which enables its employment for analytical purposes and for studying the mechanism of complicated oxidative reactions proceeding at high anodic potentials. Polarograms were taken of the anodic oxidation of H_2SO_3 in 1N H_2SO_4 of HNO_2 in 1N HNO_3, and of H_2O_2 in acidic and alkaline media, and the characteristics of these processes were established. An influence was found of the state of the surface of the platinum electrode on the values of the maximal current of diffusion. The influence of the velocity of the variation in the potential of the Pt electrode on the value of the maximal current of the polarographic wave of the oxidation of H_2SO_3, HNO_2 and H_2O_2 is explained by the mechanism of the oxidative processes proceeding on the Pt anode. The proposed possible mechanism of the studied processes consists in that as the reaction determining the velocity of the total electrochemical process there is assumed the reaction of oxidation of the reducer by the oxygen electrochemically adsorbed on the platinum in the range of potentials of the going reactior. (Author)

Rozovskii, A. Ya.
KINETICS OF HETEROGENEOUS, CATALYTIC REACTIONS OF FIRST ORDER IN THE PRESENCE OF "ADSORPTIVE INHIBITION". [1962] 4p. 8 refs.
Order from OTS or SLA $1.10 62-16561

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2 [no. 3] p. 374-377.

DESCRIPTORS: *Reaction kinetics, *Catalysis, Chemical reactions, *Adsorption, Inhibition.

Kinetics of heterogeneous, catalytic, 1st order reactions was examined in flow and complicated by adsorptive inhibition; a kinetical equation is proposed and the regions of the reaction occurrence are delimitated. A derived equation coincides with the equation of Frost in kinetic region. In adsorptive region the physical meaning and the value of coefficients in the equation change; the coefficients are independent of the reaction rate constant, and the apparent activation energy of adsorption of the reacting substance is determined from temperature dependence of constant d. Both coefficients in the equation are function of the rate constant (respectively, of the temperature) in transition region, which permits an experimental exposure of the adsorptive inhibition. (Author)

Shmonina, V. P. and Sokol'skii, D. V.
CATALYTIC REDUCTION MECHANISMS FOR NITROBENZENE AND SOME OF ITS DERIVITIES. Jan 62, 11p. 19 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Kinetika i Kataliz (USSR) 1961 [v. 2] no. 7, p. 38ff.

DESCRIPTORS: *Nitrobenzenes, *Anilines, Reduction, *Nickel catalysts, *Platinum catalysts, *Palladium catalysts, Catalysis, Reaction kinetics, *Chemical engineering.

Stepanov, G. K. and Trunov, A. M.
THE BEHAVIOR OF A PLATINUM ELECTRODE, WASHED BY A MIXTURE OF OXYGEN AND CARBON DIOXIDE, IN FUSED CARBONATES. 4 May 62 [7]p. 12 refs.
Order from OTS or SLA $1.10 62-18031

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 142 [no. 4] p. 866-869.

DESCRIPTORS: *Electrochemistry, *Platinum electrodes, *Carbonates, Fuzed materials, Gases, Oxygen, Carbon dioxide.

A study was made of the dependence of the EMF of gas-concentration cells in fused carbonates on the composition of the gas contacting the Pt electrode. It was established that the surface of a Pt sheet electrode during operation in fused carbonates is covered by a relatively thin but hard layer of oxides, protecting the metal against further oxidation. As a result, the oxidized Pt surface acts as a sufficiently inert electrode. At a Pt electrode washed by an O_2-CO_2 mixture, in fused carbonates, the following equilibrium is established:

$$CO_3^{=} \rightleftarrows CO_2 + 0.5O_2 + 2e.$$

Stöcker, J.
COMMENT ON THE STABILIZATION OF CUBIC ZIRCONIA. Oct 61, 1300 words.
Order from HB $3.90 HB-5259

Trans. of Société Chimique de France. Bulletin, 1961 [no. 1] p. 78-79.

DESCRIPTORS: *Zirconium compounds, *Oxides, Metals, Solids, Single crystals, *Chemical equilibrium.

Tchoubar, Bianka.
PROCESS FOR THE PREPARATION OF QUATERNARY AMMONIUM SALTS. [1962] 7p.
Order from OTS or SLA $1.10 62-16243

Trans. of French patent 1,122,406, gr. 14.--cl. 1, internat. cl. C 07 c--C 11 7 A-01 .n, appl. 23 Feb 55, granted 22 May 56, pub. 6 Sep 56.

DESCRIPTORS: *Ammonium radicals, *Bromides, Alkyl radicals, Hydroxides, Ethyl radicals, Methyl radicals, Synthesis.

Ting, Au-chin and Yao, Kuo-sui.
THE REACTION KINETICS OF POLYESTERIFICATION. Jan 62, 11p. 18 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Kao Fen Tzu T'ung Hsün (Chinese People's Republic) 1959, v. 3, no. 5, p. 195ff.

DESCRIPTORS: *Esterification, *Reaction kinetics, *Catalysts, Hydrogen, Molecular structure, Acids, Glycols, *Chemical engineering.

Tumarev, A. S. and Panyushin, L. A.
INVESTIGATING THE PROCESS OF REACTION OF CHROMIUM AND IODINE VAPOR. 1 Oct 62 [14]p. 13 refs. JPRS: 15508.
Order from OTS or SLA $1.60 62-33320

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1962, v. 35, no. 5, p. 1000-1008.

DESCRIPTORS: *Chromium, *Iodine, Vapor pressure, Chemical reactions, Chemical elements, Vaporization, Gases, Mercury, Iodides, Chromium compounds, Dissociation, Thermodynamics

A method has been elaborated and experimental equipment has been built for investigating the process of reaction between chromium and iodine vapor, distinguished by simplicity and reliability. In investigating the process of reaction between chromium and iodine in the 150-1100° temperature interval with iodine vapor pressure of 10^{-3} to 10^{-4} mm of mercury it was determined that iodides of varying composition are formed simultaneously. However at high temperatures CrJ_2 prevails, and at low temperatures – CrJ_3, and the formation of CrJ_4 is possible at lower temperatures. The process activation energy has been calculated at 23.60 large calories. A formula has been developed for calculating the process equilibrium constants $\lg K_p = \frac{8327}{T} - 4.31$. The reaction equilibrium constant and the degree of chromium iodide dissociation at temperatures from 500 to 1200° have been calculated. Utilizing this method with suitable correlation of height of chromium layer to rate of iodine vapor flow, it is possible to conduct the process of obtaining iodides at temperatures of 500-600° with the utilization of 96-99% of iodine with a yield of equivalent amount of chromium iodides. The practically total dissociation of iodides is thermodynamically assured at a temperature of 1200°. (Author)

Tyuryaev, I. Ya. and Kolobikhin, V. A.
DEHYDROGENATION RATE OF A MIXTURE OF N-BUTYLENES ON INDUSTRIAL CATALYST WITH DILUTION BY STEAM. [1962] 9p. 7 refs.
Order from OTS or SLA $1.10 62-16565

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2 [no. 3] p. 429-434.

DESCRIPTORS: *Reaction kinetics, *Catalysts, Dehydrogenation, *Butenes, Steam, Chemical reactions.

The reaction rate of dehydrogenation of n-butylenes mixture at dilution with steam was studied in the isothermal laboratory reactor at 580-620°C, ratios C_4H_8/H_2O $1/10^{-1}/30$ and at the interval of space velocities of 1,000 - 4,000 $hour^{-1}$. Some characteristic singularities of the dehydrogenation kinetics were discussed a kinetical equation is proposed and the activation energy, equal to 24.8 kcal/mole, is determined. A reaction scheme is proposed for the butylene dehydrogenation at dilution with steam. (Author)

Varlamov, M. I.
OXIDACION DEL GAS SULFUROSO SOBRE CATALIZADORES DE VANADIO EN ESTADO DE SUSPENSION (Okislenie Sernistogo Gaza na Vanadievom Katalizatore vo Vzveshennom Sostoyanii) (Sulfurous Acid Gas Oxydation on Vanadium Catalysts in Suspension) 8p. 7 refs. CID: 62-58. (text in Spanish).
Order from OTS or ETC $1.30 62-26258

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1954 [v. 27] no. 4, p. 360-367.

DESCRIPTORS: Oxydation, *Sulfur compounds, Dioxydes, Catalysts, Vanadium.

Vasil'ev, R. F. and Vichutinskii, A. A.
THE NATURE OF THE RELATION BETWEEN CHEMILUMINESCENCE AND OXIDATION BY MOLECULAR OXYGEN. 25 Apr 62 [7]p. 11 refs.
Order from OTS or SLA $1.10 62-18033

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 142 [no. 3] p. 615-618.

DESCRIPTORS: Chemical reactions, *Luminescence, *Nitriles, Oxidation, *Peroxides, Reaction kinetics.

It was established that, in radical reactions, the increase in chemiluminescence on introduction of oxygen is chemical in nature. It is connected with the appearance of peroxide radicals in the reaction, and with high luminescence yields on recombination of the peroxide radicals. (Author)

Voevodskii, V. V.
APPLICATION IN CHEMISTRY OF THE ELECTRONIC PARAMAGNETIC RESONANCE. [1962] 12p. 33 refs.
Order from OTS or SLA $1.60 62-16621

Trans. of Kinetika i Kataliz (USSR) 1960, v. 1, no. 1, p. 45-54.

DESCRIPTORS: *Paramagnetic resonance, Resonance absorption, Spectrographic analysis, Electrons, *Free radicals, *Polymers.

Basic positions of the electronic paramagnetic resonance method (EPR). are exposed. A survey is given on the results, produced in the authors laboratory, on EPR application for structural investigation of the paramagnetic particles - the negative aromatic ions radicals and radicals, formed during interaction of ionizing radiation with polymers. Results of qualitative studying of direction and rates of some radicals conversion in solid state are mentioned. (Author)

Wynn, Robert Walter.
METHOD FOR THE PREPARATION OF 2, 2, 3, 3-TETRACHLORO-1, 4-BUTANEDIOL. [1962] 11p.
Order from OTS or SLA $1.60 62-16280

Trans. of German patent 1,051,267, cl. 12o 3/04, internat. cl. C 07 c (G 22371 IV b/12o) by General Aniline and Film Corp. (U.S.) appl. 25 June 57, appl. pub. and issued 26 Feb 59, pat. pub. 20 Aug 59 (priority claimed: U.S. 23 July 56).

DESCRIPTORS: *Chlorides, *Butanols, Synthesis.

The method is characterized by the fact that 2-butine-1, 4-diol is converted under esterifying conditions with such an amount of the acylating agent that the corresponding 1, 4-diacyloxy-2-butine is formed; that the latter is converted with such an amount of chlorine that the corresponding 1, 4-diacyloxy-2, 2, 3, 3-tetrachlorobutane is formed and that the latter is hydrolyzed to the desired 2, 2, 3, 3-tetrachloro-1, 4-butanediol. Acetanhydride, lauric acid, benzoic acid or furoic acid can be used as acylating agents.

Zaalishvili, Sh. D.
THE SECOND VIRIAL COEFFICENT OF PURE GASES (Vtoroi Virial'nyi Koeffitsient dlya Chistykh Gazov). [1962] [42]p. (foreign text included) 80 refs.
Order from OTS or SLA $4.60 62-16705

Trans. of Uspekhi Khimii (USSR) 1955, v. 24, no. 6, p. 759-778.
Also available without foreign text from OTS or SLA $2.60 as 62-14879 [1962] [24]p.

DESCRIPTORS: *Gases, *Thermodynamics, Pressure, Equations of state, Thermochemistry.

A literature survey.

Zhdanov, S. P. and Koromal'di, E. V.
SELECTIVE SORPTION ON POROUS GLASSES. Jan 62, 3p. 5 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 138, no. 4, p. 870ff.

DESCRIPTORS: *Glass, *Porous filters, Adsorption, Acids, *Absorbents, *Chemical engineering.

EARTH SCIENCES

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACT JOURNALS NO. 13 (MINING SERIES). 16 July 62 [22]p. JPRS: 14475.
Order from OTS or SLA $2.60 62-32003

Trans. of selected abstracts from Referativnyi Zhurnal. Gornoe Delo (USSR) 1962, nos. 1 and 3.

DESCRIPTORS: *Bibliography, *Abstracts, *Mining engineering, *Minerals, Ores, *Petroleum, *Natural gas, *China.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNAL: GEOGRAPHY, 1961, NOS. 8-9 AND 12. 4 Sep 62 [50]p. JPRS: 15118.
Order from OTS or SLA $4.60 62-32875

Trans. of selected abstracts from Referativnyi Zhurnal. Geografiya (USSR) 1961, nos. 8-9 and 12.

DESCRIPTORS: *Asia, China, *Geography *Ecology, *Economics, *Meteorology, *Oceanography, *Hydrology, *Bibliography, *Abstracts.

PROBLEMS OF THE ARCTIC AND ANTARCTIC, 1961, NO. 9: [SELECTED] ARTICLES. 27 July 62 [60]p. 30 refs. JPRS: 14620. NASA N62-14329
Order from OTS or SLA $6.60 62-32070

Trans. of Problemy Artiki i Antarktiki (USSR) 1961, no. 9, p. 37-61, 63-65, 85-87,89-92, 104.

DESCRIPTORS: *Antarctic regions, *Arctic regions, *Atmosphere, Solar energy, Meteorology, Earth, Rotation, Stresses, *Water vapor, Thermal conductivity, *Snow, Nonlinear systems, *Ionosphere, *Glaciers, Pulse analyzers, Magnetometers, Diurnal variation, Magnetism, Franz Josef Land, *Terrestrial magnetism, Magnetic laboratories.

Contents:
Aerological characteristics of the structure of the atmosphere over Mirnyi, by T. A. Tsitovich and R. A. Zagudaeva
On the effect of irregularities of the earth's rotation on the processes in its atmosphere and hydrosphere, by N. S. Sidorenkov
Thermal characteristics of the Arctic snow cover, by A. P. Koptev
On the problem of nonlinearity of the electric characteristics of the ionosphere, by L. P. Kuperov
On the problem concerning the trend of the glaciation of Franz Josef Land, by L. S. Govorukha and I. M. Simonov
Some properties of giant pulsations of the geomagnetic field, by A. I. Ol' and N. D. Chicherina
Q-indices of geomagnetic activity according to the data of Soviet Arctic Observatories, by G. I. Korobkova and A. I. Ol'
Thirty years of work of the Tikhaya Bay Polar Magnetic Station, by A. P. Nikol'skii.

Dreer, A. A.
GEOLOGY IN THE USSR (AT THE BOTTOM OF THE ARAL SEA). 13 Aug 62 [6]p. (4 photos omitted). JPRS: 14817.
Order from OTS or SLA $1.10 62-32441

Trans. of Priroda (USSR) 1962 [v. 51] no. 3, p. 58-61.

DESCRIPTORS: Geology, *Ocean bottom, *Aral Sea, *Metals.

Descriptions are presented of strange metallic formations that are found on the eastern side of Lazarev Island in the Aral Sea after storms. The principal material of the formations (which occur in various shapes) is iron, but they also contain 0.1 to 0.08% silver, 0.1% magnesium, 0.1% nickel, 0.001% copper, and 0.01 to 0.001% lead, and traces of molybdenum, lanthanum, silicon, niobium, calcium, arsenic and phosphorus. The specific weight varies

from 4.5 to 5.3. It is suggested that the fragments may be (1) remains of a meteorite of unusual composition, (2) remains of metal work by an ancient unknown civilization, or (3) the result of bacterial activity from the period of the Aral-Caspian transgressions.

Pavlov, N. N. and Staritsyn, G. V.
CHANGES IN THE AXIAL VELOCITY OF THE EARTH'S ROTATION. 28 Aug 62, 2p. AID Rept. 62-128; AD-284 023.
Order from OTS or SLA $1.10 62-33104

Abstract trans. of Priroda (USSR) 1962 [v. 51] no. 5, p. 120-121.

DESCRIPTORS: *Earth, *Rotation, Velocity, Climatic factors, Atmosphere, Motion.

Climatology and Meteorology

Aujeszky, Laszlo.
THE ROLE OF STATIONARY WEATHER FRONTS IN CAUSING ABUNDANT PRECIPITATION DURING THE AUTUMN AND EARLY WINTER PERIOD. 6 Dec 61 [16]p. JPRS: 11440.
Order from OTS or SLA $1.60 62-19540

Trans. of Hidrologiai Kozlony (Hungary) 1961 [v. 41] no. 4, p. 330-333.

DESCRIPTORS: Weather forecasting, Meteorological data, *Precipitation, *Periodic variations, *Hydrology, Climate, *Air mass analysis.

Gal'tsov, A. P.
CONFERENCE ON THE PROBLEM OF THE MODIFICATION OF CLIMATE. 13 Mar 62 [16]p. JPRS: 12930.
Order from OTS or SLA $1.60 62-23437

Trans. of Akademiya Nauk SSSR. Izvestiya. [Seriya Geograficheskaya] 1961, no. 5, p. 128-133.
An abstract trans. is available from OTS or SLA $1.10 as 62-15410, AID-61-170, 21 Dec 61, 3p.

DESCRIPTORS: Conferences, *Climate, *Control, Meteorology.

Grishin, N. I.
MOTION PICTURE STUDIES ON THE MOTION OF NOCTILUCENT CLOUDS (Izuchenie Dvizhenii Serebristykh Oblakov Metodom Kinosemki). [1961] [8]p. 2 refs.
Order from OTS or SLA $1.10 62-10166

Trans. of Meteorologiya i Gidrologiya (USSR) 1957, no. 3, p. 34-[37].
Other translations are available from LC or SLA mi$1.80, ph$1.80 as 59-22183, AmMetSoc-T-R-192, Apr 59 [9]p; mi$2.40, ph$3.60 as 59-15561 [1959] 11p; and from OTS $1.10 as AD-264 145, STL-TR-61-5110-44, Aug 61, 8p.

DESCRIPTORS: *Clouds, Motion, Ions, Particles, Meteorites, Upper atmosphere, *Photographic analysis, *Motion picture photography.

Geodesy

Bolotin, A. L.
WAYS TO INCREASE THE EFFECTIVENESS OF THE PRINCIPLE OF LEAST SQUARES IN OVERCOMING SYSTEMATIC ERRORS. [1962] [7]p. 4 refs. AERDL T-1623.
Order from OTS or SLA $1.10 62-33211

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Geodeziya i Aerofotos"emka (USSR) 1961, no. 4, p. 39-42.

DESCRIPTORS: *Least squares method, Geodetic data, Measurement, Errors, Corrections.

Urmaev, N. A.
SUCCESSIVE ADJUSTMENT OF TRIGONOMETRIC NETWORKS. [1962] [93]p. 4 refs. ACIC RR-7a
Order from OTS or SLA $8.60 62-15588

Trans. of Tsentral'nyi Nauchno-[Issledovatel'skii] Institut Geodezii [Aeros"emki] i Kartografii. Trudy (USSR) 1931, v. 3, p. 3-72.

DESCRIPTORS: Trigonometry, *Geodesics, Errors, Corrections, Transformations (Mathematics), Azimuths, Correlation techniques.

Geography

Dibner, V. D.
THE APPLICATION OF AVIATION METHODS IN EXPLORING THE HIGH-LATITUDE REGIONS OF PRESENT-DAY GLACIATION, tr. by E. R. Hope. May 62 [9]p. DSIS T 371 R.
Order from NRCC NRCC C-4055

Trans. of Vsesoyuznoe Geograficheskoe Obshchestvo. Izvestiya (USSR) 1962, v. 94, no. 1, p. 61-65.

DESCRIPTORS: *Arctic regions, Franz Joseph Land, *Glaciers, Morphology, *Aerial photography.

Rado, Sandor.
GEOGRAPHIC CHANGES IN THE SOVIET BLOC. 2 Aug 62 [6]p. JPRS: 14700.
Order from OTS or SLA $1.10 62-32208

Trans. of (excerpts) from Geodezia es Kartografia (Hungary) 1962, v. 14, no. 2, p. 119-123.

DESCRIPTORS: *Geography, Mapping, Hungary, East Germany, Rumania.

Geology

GEOLOGICAL BULLETIN: INSTITUTE FOR GEOLOGICAL INVESTIGATIONS AND TESTING OF BUILDING MATERIALS AND SOIL OF THE PEOPLES' REPUBLIC OF BOSNIA AND HERZEGOVINA, 1955. 1962, 220p. 108 refs. PL-480 Int.
Order from OTS $2.25 60-21643

Trans. of Geoloski Glasnik: Zavod za Geoloska Istrazivanja i Ispitivanja Gradevinskih Materijala i Tla NRBiH (Yugoslavia) 1955.

DESCRIPTORS: *Geological surveys, *Maps, *Sedimentation, *Ores, Zinc, Lead, Barium compound, Sulfates, Pyrites, Rocks, *Clays, *Shales, *Granite, Paleoecology, *Mollusca, Stratification, *Oils, Minerals, *Gypsum, *Anhydrides

Contents:
Borovica-Vares: a sedimentary deposit of zinc, lead, barite and pyrite, by Mehmed Ramovic
On the examination of slates and kaolinite-montmorillonite clays from several localities in Bosnia and Hercegovina (a preliminary report) by V. Podupsky
Petrological description of the Maglaj granite, by Drago Varicak
Molluscan fauna in the Marine Sarmatian of northeastern Bosnia, and its stratigraphic significance, by Ivan Soklic
Geology of West Crmnica and the problems of oil possibilities in the Montenegrin littoral, by Milasin Miladinovic
Gypsum and anhydrite occurrences in the upper course of the Rama and Doljanka rivers, by Jakob Pamic
Chrisotile asbestos at Bosansko Petrovo Selo, by Milan Mitrovic.

GEOLOGY OF COAL DEPOSITS IN SHANTUNG, NINGHSIA, AND HUNAN PROVINCES. 27 June 62 [125]p. 25 refs. JPRS: 14291.
Order from OTS or SLA $10.10 62-25529

Trans. of Ti Chih Hsüeh Pao (Chinese People's Republic) 1960, v. 40, no. 1, p. 70-87 and 89-119.

DESCRIPTORS: *Geology, *Coal, Deposits, Paleoecology, *China.

Contents:
Geological characteristics of the "Lu Hsi" (Western Shantung) coal fields, by Chung Shih-hsing
The Ho Lan Shan Coal-bearing district, by Ting P'ei-min
Structural characteristics of the upper permian "To Ling" coal-bearing series in Hunan province, by Wang Chai-hsia.

INTERNATIONAL GEOLOGY REVIEW, VOL. 3, NO. 2, P. 93-185. Feb 61, 1v. 44 refs.
Order from AGI $5.00, $55.00/year

Trans. of Sovetskaya Geologiya (USSR) 1959, no. 8; p. 61-80; Mineralogicheskii Sbornik (USSR) 1959, v. 13, p. 149-157; Schweizer[ische] Mineralogische und Petrographische Mitteilungen, 1959, v. 39, p. 1-84; Izvestiya Vysshikh Uchebnykh Zavedenii. Neft' i Gaz (USSR) 1959, v. 2, no. 9, p. 11-18; Akademiya Nauk SSSR. Sovet po Izucheniyu Proizvoditel'nykh Sil. Trudy: Seriya Kol'skaya, 1933, no. 6, p. 5-56; and mono. ##Geokhimicheskie Poiski Rudnykh Mestorozhdenii v SSSR [Moscow] 1957, p. 158-165. ##Also available from OTS or SLA $2.60 as 62-13106, 1960 [25]p.

DESCRIPTORS: *Geology, *Mercury, Deposits, *Geophysical prospecting, *Geochemistry, Ores, *Feldspar, *Tin, Minerals, *Sodium, *Potassium, Rock, Grains (Metallurgy), *Quartz, *Petrology, *Climate, Sedimentation, *Oils, *Geography, *Exploration.

Contents:
##Methods of mercurometric investigations, by E. A. Sergeev
Autometasomatic alteration of granitoids and association of tin mineralization with the zone of sodium-potassium metasomatism, by V. A. Serebryakov
Recrystallization during the formation of crystalline quartz veins, by E. M. Lazko
Syngenesis and epigenesis in petrography and the study of mineral deposits, pt. 1, by G. C. Amstutz
Climate and oil genesis, by L. A. Nazarkin
Report of the work of the geographic exploration party of the Kola Expedition of 1930, by G. D. Rikhter
Reference section.

Beus, A. A.
BERYLLIUM: EVALUATION OF DEPOSITS DURING PROSPECTING AND EXPLORATORY WORK, tr. by F. Lachman. Aug 62, 161p. 39 refs.
Order from W. H. Freeman and Co., 660 Market St., San Francisco. 4, Calif. $5.00

Trans. of mono. Berillii-Otsenka Mestorozhdenii pri Poiskskh i Razveskakh, Moscow, 1956.

DESCRIPTORS: *Beryllium, Deposits, Minerals, Geochemistry, Economics, Geophysical prospecting, *Beryl, Exploration, Sampling.

D'Hoeraene, J.
DECONVOLUTION OF REAL TRACES. [1962] 15p.
Order from ATS $16.50 ATS-04P61F

Trans. of Geophysical Prospecting (Netherlands) 1962, v. 10, no. 1, p. 68-83.

DESCRIPTORS: *Geophysical prospecting, Geology.

Eigenson, M. S.
COSMIC FACTORS OF GEOTECTONICS. 10 June 62, 2p. AID Rept. 62-75.
Order from OTS or SLA $1.10 62-25770

Abstract trans. of #Akademiya Nauk SSSR. Izvestiya. Seriya Geologicheskaya, 1962 [v. 27] no. 4, p. 7-12.

DESCRIPTORS: Geology, *Geophysics, *Earth, *Lithosphere, Geological time, Rotation, Velocity.

Recent geological and geophysical research show that the earth's crust, and probably its upper mantle have a mosaic-block type of structure. The earth's rotation, is not uniform: the angular velocity of rotation is subject to periodic slow changes with sporadic "jumps". These changes in its angular velocity of rotation, and its block structure, have kept the earth in a state of mechanical strain throughout the period of geological time. The origin of these "jump-type" changes may be explained by the effect on the earth of solar activity. The sun has exercised a partial control over geodynamics (and through it, over geotectonics) since the beginning of geological time. The rhythm of solar activity of variable duration must be regarded as the cause of the corresponding rhythm in occurrence and intensity of the sporadic rotational regime changes, and so ultimately as the cause of the geotectonic effects of the latter. (Extracted)

Obuchowicz, Z., Tokarski, A., and Wdowiarz, S.
GEOLOGICAL STRUCTURE OF LUBACZOW.
27 Oct 58 [18]p. 13 refs. JPRS(NY)-L-423.
Order from OTS or SLA $1.60 PB 141 323T

Trans. of Nafta (Poland) 1958, v. 14, no. 4, p. 89-97.

DESCRIPTORS: *Geology, *Geophysical prospecting, Natural gas, Petroleum, Poland.

Rubinshtein, M. M. and Gel'man, O. Ya.
THE NEED FOR STANDARDIZING THE VALUES OF THE CONSTANTS OF RADIOACTIVE DECAY OF K^{40} USED IN ABSOLUTE AGE COMPUTATIONS.
9 Aug 62, 1p. AID rept. 62-114; [NASA N62-14681].
Order from OTS or SLA $1.10 62-32589

Abstract trans. of #Akademiya Nauk SSSR. Izvestiya. Seriya Geologicheskaya, 1962 [v. 27] no. 6, p. 3-11.

DESCRIPTORS: *Geological time, Determination, *Potassium, *Radioactive decay, Argon, Standardization.

Mineralogy

Kujundzic, B.
TESTING MECHANICAL FEATURES OF ROCKS (Rezultati Ispitivanja Mehanickih Svojstava Stena) tr. by Jelena Markovic. 1961, 19p. 8 refs. PL-480 Int.
Order from OTS $0.50 60-21655

Trans. of [Jugoslavenska Akademija Znanosti i Umjetnosti. Odjel za Prirodne Nauke. RAD] 1957, no. 5, p. 5-24.

DESCRIPTORS: *Geophysics, Mountains, *Rocks, Calcite, Clays, Classification, Mechanical properties, Test equipment, Seismic waves, Polarization, Deformation, Thermodynamics.

Rekharskii, V. I.
MÉCANISME DE RÉPARTITION DU MOLYBDÈNE ET DE L'URANIUM DANS LES ZONES MINÉRALISÉES [The Distribution of Molybdenum and Uranium in Mineralized Zones] tr. by de Trezvinsky.
1 Feb 62 [43]p. 15 refs. CEA Trans. no. R 1481 (text in French).
Order from OTS or SLA $4.60 62-25100

Trans. in French of #Akad[emiya] Nauk SSSR. Izv[estiya]. Ser[iya] Geol[ogicheskaya] 1959 [v. 24] no. 8, p. 20-33.
Other translations are available in English from AGI $4.25 and from OTS or SLA $2.60 as 61-15957 [1961] 23p.

DESCRIPTORS: Distribution, *Molybdenum, *Uranium, Minerals, Geochemistry, Chemical elements, Geology, Ores, Deposits, Mining engineering

Schwertmann, U.
THE SYNTHESIS OF DEFINITE IRON OXIDES UNDER VARIOUS CONDITIONS. [1962] 12p. (figs. omitted) 25 refs.
Order from SLA $1.60 62-16447

Trans. of Z[eitschrift für] Anorg[anische] Chemie (East Germany) 1959, v. 298, p. 338-348.

DESCRIPTORS: *Ores, *Iron compounds, Oxides, Synthesis, Oxidation, Aging, Gels, *Crystal structure, X-ray diffraction analysis.

Yanat'eva, O. K.
INVESTIGATION OF EQUILIBRIA IN THE MARINE SYSTEM K, Na, Mg // Cl, SO_4--H_2O, PT. 1 (Issledovanie Ravnovesii v Morskoi Sisteme K, Na, Mg // Cl, SO_4--H_2O pri 25°). [1962] [34]p. (foreign text included) 19 refs.
Order from OTS or SLA $3.60 62-16438

Trans. of Akademiya Nauk SSSR. Sektor Fiziko-Khimicheskogo Analiza. Izvestiya, 1949, v. 17, p. 370-382.

DESCRIPTORS: Minerals, *Crystals, *Potassium, *Sodium, *Magnesium, Chlorides, Sulfates, Hydrates, Chemical equilibrium, Fertilizers.

The 25° solubility isotherm was studied of the quaternary system K_2SO_4 — Na_2SO_4 — $MgSO_4$ — H_2O, which enters into the composition of the five-component ma marine system K, Na, Mg || Cl, SO_4 H_2O. The volumes of crystallization of glaserite, schönite, and potassium sulfate in the marine system K, Na, Mg || Cl, SO_4 —H_2O at 25° were determined. On the basis of the results obtained and literature data the complete prismatic diagram was constructed of this complex five-component system, including fifteen salt crystallization volumes, known at 25°. The possibility of using the obtained diagram to determine the physicochemical conditions of conversion of the potassium salts of the Volga-Emba formations to concentrated potassium-sulfate fertilizers and potassium-sulfate was shown in general outline. (Author)

Bovsheverov, V. M. and Mordukhovich, M. I.
LOCAL ACOUSTICAL METHODS OF INVESTIGATING THE ATMOSPHERE. 27 Aug 62 [9]p. JPRS: 14982.
Order from OTS or SLA $1.10 62-32546

Trans. of Akademiya Nauk SSSR. Vestnik, 1961, [v. 31] no. 9, p. 56-60.
Another trans. is available from OTS or SLA $1.60 as 62-15236, JPRS-11621, 22 Dec 61 [16]p.

DESCRIPTORS: Atmosphere, *Atomspheric sounding, Instrumentation, *Acoustics, *Anemometers, *Thermometers, Design.

Konstantinova.
THE DETERMINATION OF ATMOSPHERIC OZONE AT ALTITUDE OF 13 AND 14 km. [1961] 2p. (2 figs. 7 refs. omitted).
Order from OTS or SLA $1.10 61-28430

Trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) [de l'Academie des Sciences de l'U. R. S. S.] 1938, v. 18, p. 337.

DESCRIPTORS: Atmosphere, *Ozone, Determination, Fluorometers, Air

Laikhtman, D. L.
THE STATEMENT OF THE PROBLEM OF THE STATIONARY STRUCTURE OF THE BOUNDARY LAYER OF THE ATMOSPHERE (Postanovka Zadachi o Statsionarnom Stroenii Pogranichnogo Sloya Atmosfery) tr. by Myron Ricci. Nov 61 [10]p. 7 refs. AmMetSoc-T-R-378+. AD-284 766.
Order from OTS or SLA $1.10 62-33223

Trans. of Glavnaya Geofizicheskaya Observatoriya [Leningrad]. Trudy (USSR) 1960, no. 94[156]p. 3-7.

DESCRIPTORS: *Atmospherics, *Boundary layer, Air mass analysis, Wind, Temperature, Humidity, Turbulence.

The overall problem of the distribution of wind, temperature, humidity and of the turbulence coefficient in the boundary layer of the atmosphere under stationary conditions is mathematically formulated. The results of the calculations are compared with experimental data. (Author)

Mirtov, B. A.
ROCKETS, SPUTNIKS AND THE EXPLORATION OF THE UPPER ATMOSPHERE. [1962] [14]p.
Order from OTS or SLA $1.60 62-14557

Trans. of Prioroda (USSR) 1961 [v. 50] no. 10, p. 23-31.

DESCRIPTORS: *Rocket research, *Satellite vehicle, research, Atmosphere, *Ionosphere, Stratidication, Density, Temperature, Periodic variations, Gases, Molecular weight, Meteorites.

Rozenberg, G. V. [ed.].
THE SEARCHLIGHT BEAM IN THE ATMOSPHERE [INVESTIGATIONS IN ATMOSPHERIC OPTICS]: TABLE OF CONTENTS AND FOREWARD, tr. by Robert Sholiton. June 62 [6]p. AmMetSoc M-RTC-39; AD-285 243.
Order from OTS or SLA $1.10 62-33361

Partial trans. of mono. Prozhektornyi Luch v Atmosfere [Issledovaniya po Atmosfernoi Optike] Moscow, 1960, 243p.

DESCRIPTORS: Atmospherics, *Optics. *Searchlights, *Atmospheric sounding.

Yur'ev, A.
SECRET OF THE BURNING BALL, tr. by Morris D. Friedman. Jan 61 [5]p. MDF I-127; AFCRL-21; AD-251 773.
Order from OTS $0.50 62-11438

Trans. from Komsom[ol'skaya] Pravda (USSR) 1960, 30 Oct, p. 3.
Available in paper copy from MDF $2.00 as MDF I-127.

DESCRIPTORS: *Lightning, Luminescence, Dissociation, Ionization, Atoms, Air.

Ball lightning is explained as the luminescence of dissociated and ionized air. An apparatus is described in which artificial ball lightning can be produced on a small scale.

Kogan, S. D., Pasechnik, I. P., and Sultanov, D. D.
DISTINCTION BETWEEN THE SEISMIC WAVE PERIODS IN UNDERGROUND EXPLOSIONS AND IN EARTHQUAKES [Razlichie v Periodakh Seismicheskikh Voln, Vozbuzhdaimykh pri Podzemnykh Vzryvakh i Zemletryaseniyakh]. 28 Aug 62 [12]p. 4 refs. [USASIA] Trans. Log no. 1071
Order from OTS or SLA $1.60 62-32910

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 129, no. 6 [p. 1283-1286].
Other translations are available from AGI $8.00 and from LC or SLA mi$1.80, ph$1.80 as SCL-T-295, 16 Feb 60, 8p.

DESCRIPTORS: *Earthquakes, *Underground explosions, Explosions, *Seismic waves, Analysis.

For abstract see Technical Translations 4: 214, 1960.

(Earth Sciences--Seismology, TT, v. 8, no. 10)

Savarenskii, E. F. and Kirnos, D. P.
ELEMENTS OF SEISMOLOGY AND SEISMOMETRY, 2D ED. [1962] [574]p. 267 refs.
Order from OTS or SLA $26.00 62-33273

Trans. of mono. Elementy Seismologii i Seismometrii, 2d ed., Moscow, 1955, 538p.

DESCRIPTORS: *Earthquakes, *Seismic waves, Elasticity, Propagation, *Seismographs, Galvanometers, Instrumentation, Earth, Geophysics.

Contents:
General information on earthquakes
Elements of the theory of elasticity and wave propagation
The effect of the earth's surface on the propagation of seismic waves
The study of the structure of the earth's crust and of the movements in the focus of a tectonic earthquake
The internal structure of the earth as determined from seismic data
Preliminary information on stationary seismometric observations
Elements of the theory of seismic instruments with direct registration
Elements of the theory of seismographs with galvanometer recording
Stationary seismographs and seismoscopes
Methods for determining constants

ENGINEERING

ENGINEERING (AERONAUTICAL, CIVIL, ELECTRICAL, MECHANICAL, NUCLEAR, PETROLEUM, AND STRUCTURAL) MACHINERY, AND EQUIPMENT. NO. 19. Series 4 of English Abstracts of Selected Articles from Soviet Bloc and Mainland China Technical Journals. Aug 62, 60p.
Order from OTS $25.00/year 61-11143-19
foreign $32.00/year

DESCRIPTORS: *Engineering, *Machines, *Abstracts, Aeronautics, Civil engineering, Electrical engineering, Chemical engineering, Mechanical engineering, Nuclear physics, Petroleum, China.

Consists of abstracts in English.

TESTS CONDUCTED BY THE SPECIAL TEAM OF THE STUDIO (OUTCOME OF THE TESTS CONDUCTED ON DOMESTIC MAGNETIC RECORDING TAPE) DEC 58. [1962] (figs. omitted) 13p.
Order from SLA $1.60 62-14026

Trans. of unidentified mono. issued by the Private Broadcaster's Association of Japan.

DESCRIPTORS: *Magnetic tape, Sound recording systems, Tests, Physical properties, Electrical properties.

Results of tests made by 10 Japanese broadcasting companies are given for Sonitape manufactured by So Ni Ichi Corporation, Synchrotape manufactured by Tokyo Electro-Chemical Industrial Company, Talkie Ribbon manufactured by Tonoku Industrial Metal Corporation, and Scotch III-A of Minnesota Mining. The tapes were examined with respect to curl, quality of magnetic coating, reeling method, cohesion, width, thickness, extra length for reeling, bias, sensitivity, sensitivity range, distortion ratio, frequency characteristics (1000 and 7000 cps), fluctuation of output, ratio of signal to noise, reproduction efficiency, erasing efficiency.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 35. 4 Sep 62 [16]p. JPRS: 15093.
Order from OTS or SLA $1.60 62-32867

Trans. of Poligraficheskoe Proizvodstvo (USSR) 1962, no. 4, p. 21-23; Tekhnika-Molodezhi (USSR) 1962 [v. 30] no. 5, p. 9 ; Svetotekhnika (USSR) 1962 [v. 8] no. 3, p. 32.

DESCRIPTORS: *Industrial research, *Precision equipment, *Printing, Magnetic recording systems, Electrostatics, *Well logging, Neutron bombardment, *Mercury lamps, *Incandescent lamps, Ships, Lighting systems.

Contents:
State of electrostatic and magnetic copying methods, by E. L. Nemirovskii
Neutron core sampler
Mercury-quartz arc lamps for photocopying apparatus
Small incandescent lamps for ships.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 36. 4 Sep 62 [13]p. JPRS: 1 5096.
Order from OTS or SLA $1.60 62-32879

Trans. of Mekhanizatsiya i Avtomatizatsiya Proizvodstva (USSR) 1962 [v. 16] no. 6, p. 26-28; Radio, Moscow (USSR) 1962, no. 2, p. 9; and from Trud, Moscow (USSR) 1962, 4 Jan, p. 1; and Pravda, Moscow (USSR) 1962, 21 Jan, p. 3.

DESCRIPTORS: *Industrial research, Automation, *Precision equipment, *Radio equipment, *Electronic equipment, Radio receivers, *Television receivers

Contents:
Installing continuous-line systems at the Minsk Radio Plant, by M. Ya. Kutser and A. Z. Press
Minsk emphasizes value of permanent production conferences to improve output, by P. Lavrenovich
Moscow-produced electronic devices displayed at All-Union Exhibition
New developments in radio receivers and television sets shown at Moscow All-Union exhibition

Bazanov, A. N. and Kul'pin, V. G.
EXPERIENCE IN THE AUTOMATION OF A COAL DEVELOPMENT SHOP. 23 July 62 [11]p.
JPRS: 14559.
Order from OTS or SLA $1.60 62-32049

Trans. of #Koks i Khimiya (USSR) 1961, no. 11, p. 13-19.

DESCRIPTORS: *Automation, *Coal, Processing, Machines, Conveyors, Effectiveness, Mining engineering.

Bazhenov, I. I., Leonenko, I. A., and Kharchenko, A. K.
THE COAL INDUSTRY OF THE PEOPLE'S REPUBLIC OF CHINA: [SELECTED PORTIONS]. 6 Aug 62 [154]p. 340 refs. JPRS: 14738.
Order from OTS or SLA $11.00 62-32372

Trans. of mono. Ugol'naya Promyshlennost' Kitaiskoi Respubliki, Moscow, 1959, p. 23-25, 77-78, 286-289, 313-396, 456-477.

DESCRIPTORS: *Coal, Industry, Fuel consumption, Oils, Shales, Deposits, Blast, Explosives, Mines, *Mining engineering, Hydraulic systems, Drilling machines, Conveyors, Drainage, Combustion, Labor, Production, Costs, Scientific research, Industrial plants, *China.

Contents:
The balance sheet of fuel consumption; Oil shale deposits; Blasting material and devices; Results of the first years of underground hydraulic mining; Experimental work of introducing the technique of underground hydraulic mining; Electromechanical equipment of hydraulic mines; Trends in the further development of hydraulic coal mining; Strip mining (general information); Stripping methods; The development plans in strip mining; Drilling and blasting in stripping operations; Strip mining excavation operations; Hauling operations in strip mining; Dumping operations in strip mines; Drainage of quarries in strip mining; Spontaneous combustion and slides in stripping operations; Strip mine labor productivity and the cost of production; The future of strip mining; The status of coal benefication; Benefication plants and methods; Main future trends in coal benefication; Scientific research in the coal industry, the industrial plant and organization; Scientific research operation; Main future trends in scientific research for the coal industry.

Manvelyan, M. G., Melik-Akhnazarov, A. F. and others.
HIGH-TEMPERATURE SOLAR FURNACE.
21 Mar 62 [8]p. (7 figs. omitted) 3 refs. JPRS: 13053.
Order from OTS or SLA $1.10 62-23612

Trans. of Ogneupory (USSR) 1961 [v. 26] no. 10, p. 465-469.

DESCRIPTORS: Power supplies, *Solar furnaces, Mirrors, Foils, *Refractory materials, Smelting.

The solar unit developed by the Scientific Research Institute of Chemistry of the Council of the National Economy of the Armenian SSR was built in 1959 in collaboration with the Power Engineering Institute of the Academy of Sciences USSR, whereby the diagram of the unit and its structural design were worked out by the Power Engineering Institute of the Academy of Sciences USSR (designer, R. R. Aparisi). The unit consists of a paraboloidal reflector and a heliostat. The paraboloid reflector is attached to the metal structure in a vertical position (the axis of the reflector is horizontal) and is covered with aluminum foil to protect the mirror from the influence of the external environment. The diameter of the mirror is equal to 2.015 m, and the focal length is equal to 800 mm. The angular aperture of the mirror is equal to 61° 50'.

Aeronautical Engineering

Evlanov, N. G., Solov'ev, V. P., and Volkov, S. S.
MANUFACTURE OF PANELS BY THE METHOD OF SECTIONAL FORGING. 9 Aug 62, 3p. AID rept. 62-111; [NASA N62-14831]; AD-282 996.
Order from OTS or SLA $1.10 62-32778

Abstract trans. of Kuznechno-Shtampovochnoe Proizvodstvo (USSR) 1962 [v. 4] no. 6, p. 4-8.

DESCRIPTORS: *Airplane panels, *Forging, Dies, Mechanical properties.

Vakhitov, M. B., Shishov, V. S., and Korotkii, Yu. G.
AN INVESTIGATION OF THE DISTRIBUTION OF STRESSES IN MONOLITHIC WINGS [AND] THE CALCULATION OF THE KINETIC ENERGY OF A PLANE ABSORBED BY THE WHEEL BRAKES DURING THE LANDING RUN. 1 May 62 [22]p. 4 refs.
FTD-TT-62-379.
Order from OTS or SLA $2.60 62-24920

Unedited rough draft trans. of Izvestiya Vysshikh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1961, no. 4, p. 128-131 and 149-155.

DESCRIPTORS: *Airplanes, *Wings, Stresses, Distribution, *Airplane landings, Motion, Energy, Absorption, Hydraulic brakes, Nomographs, Landing aids.

Chemical Engineering

DISCUSSION ON REFINING. 24 Aug 58 [9]p.
JPRS(DC)-L-579.
Order from OTS or SLA $1.10 PB 141 168T

Trans. of Nafta (Poland) 1958, v. 14, no. 4, p. 109-112.

DESCRIPTORS: *Petroleum, Processing, Refineries, *Petroleum industry, Industry, Economics, *Poland.

The discussion consists of an article entitled "Full utilization of the byproducts of the conversion of petroleum will bring a considerable increase in economic returns" (Nowiny Rzeszowskie 77, no. 2736: 1 April 1958) along with an answering article prepared by the Presidium of the Directorate (Zarzad Glowny) of the Society of Engineers and Technicians of the Petroleum Industry. The 2 articles are for and against, respectively, the transfer to refineries from the Mining and Power Department to the Chemical Department.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET CHEMICAL MACHINE BUILDING (7). 27 Aug 62 [34]p. JPRS: 14999.
Order from OTS or SLA $3.60 62-32565

Trans. of Montazhnye i Spetsializirovanye Raboty v Stroitel'stve (USSR) 1962 [v. 24] no. 7, p. 1-4; Standartizatsiya (USSR) 1962 [v. 26] no. 3, p. 43; Kholodil'naya Tekhnika (USSR) 1962 [v. 39] no. 3, p. 74-75; and from Stroitel'naya Gazeta (USSR) 1962, 24 June.

DESCRIPTORS: *Industrial research, *Chemical industry, Chemical engineering, Chemistry, Machines, Construction, *Petroleum, Processing, Transportation, Handling, Industrial equipment, *Refrigerant compressors, Compressors, Turbines.

Contents:
On the delivery conditions of equipment for the petroleum-processing, petrochemical and chemical industries, by A. L. Zil'berberg
Refrigeration compressors, by V. V. Vekshin
This is necessary for a big scale chemical industry
Freon refrigeration turbocompressors KhTM-3-1-4000, KhTM-2-1-4000 and KhTMF 235-2000.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET CHEMICAL INDUSTRY (25). 2 July 62 [36]p. JPRS: 14326.
Order from OTS or SLA $3.60 62-25626

Trans. of Ekonomicheskaya Gazeta (USSR) 1962, no. 17(38) p. 21, 22, 37; no. 19[40] p. 23, 33, 34, 36.

DESCRIPTORS: Chemical engineering, *Chemical industry, Industry, Industrial production, Industrial plants, Phosphates, Air, Decontamination, Tires, Fat substitutes, Herbicides, Synthetic rubber, Rubber industry, Economics, Production.

Reserves of the Aktyubinsk chemical combine imeni Kirov, by G. Kitin and M. Neimer
Wasteful consumption of raw material in Leningradskii Sovnarkhoz chemical industry, by N. Volchkov and A. Silakov
"Voltitional startup" of the Sumgait superphosphate plant and its consequences, by K. Aver'yanov
Decontamination of city air, by I. Goloperov
Improvements at the Omsk tire plant, by B. Borovitskii
Lagging production of fat substitutes, by P. Naimenko
Lagging production of herbicides in Azerbaidzhan, by K. Aver'yanov
Reduction of expenditures per ruble of commodity production, by M. Grigoryan
Instead of grain: gifts of chemistry, by A. Belozerov
Thorough development of the synthetic rubber industry, by T. Bashkatov.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET CHEMICAL INDUSTRY (28). 22 Aug 62 [29]p. JPRS: 14923.
Order from OTS or SLA $2.60 62-32578

Trans. of Ekonomicheskaya Gazeta (USSR) 1962, no. 23[45] p. 21, 24, 34-35; and from Leninskoe Znamya (USSR) 1962, 8 June; Komsomol'skaya Pravda (USSR) 1962, 16 May; Trud, Moscow (USSR) 1962, 16 May; Sovetskaya Litva (USSR) 1962, 20 May; Pravda, Leningrad (USSR) 1962, 20 May; 5 June; 8 June.

DESCRIPTORS: *Industrial production, *Chemical industry, Industrial plants, Production, Paints, Alcohols, *Growth substances, *Fertilizers, Plastics, *Synthetic rubber, Tires, Packaging.

Contents:
Poor production at the Zagorsk lacquer and paint plant, by Z. Kuzevanov
Progress at the Ufa synthetic alcohol plant, by Ya. Khusainov
Plant growth promoter of petroleum origin and fertilizers, by A. Laletin
More rapid startup of capacities for the production of mineral fertilizers
Lagging production of vinylplast in Leningrad, by V. Vlasenko
Science scouts of the All-Union Scientific Research Institute of Synthetic Rubber, by A. Severov
Zigzags of engineering thought at Leningrad tire plant, by A. Kuz'menko and N. Chirskov
Lagging production of small-scale chemical industry, by T. Goryainova
Proposed new system of awarding prized for production increases, by V. Yakobson
Dispersion of funds and efforts in Kara Tau, by F. Nigei.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 30. 7 Sep 62 [33]p. JPRS: 15163.
Order from OTS or SLA $3.60 62-32850

Trans. of Sotsialisticheskii Trud (USSR) 1962 [v. 7] no. 6, p. 96-103; Ekonomicheskaya Gazeta (USSR) 1962, no. 26[47] p. 7, 12, 35, 39; and from Komosomol'skaya Pravda (USSR) 1962, 29 June; and Leninskoe Znamya (USSR) 1962, 30 June.

DESCRIPTORS: *Industrial research, *Chemical industry, *Tires, Quality control, *Fertilizers, Zinc compounds, Industrial plants, Alcohols, *Plastics, *Pigments.

Contents:
Quality of production and new incentives at the Moscow Tire Plant, by K. Gorlin
Utilization of zinc-containing industrial wastes to produce fertilizers, by S. Ilarionov
Expanding the Podmoskovnyi Mining and Chemical Combine, by N. Dudnik
Troubles at the Krasnoyarsk Tire Plant. by P. Alyamovskii and M. Ul'yanov
Delays in the construction of the Saratov Synthetic Alcohol Plant
Concerning the plastic products plant of the Yaroslavskii economic region, by V. Osipov
Problems in the production of natural pigments, by E. Loktionov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 31. 12 Sep 62 [27]p. JPRS: 15242.
Order from OTS or SLA $2.60 62-33011

Trans. from Trud, Moscow (USSR) 1962, 19 July; Vechernaya Moskva (USSR) 1962, 21 July; Pravda Vostoka (USSR) 1962, 11 July; Pravda, Moscow (USSR) 1962 [no. 200] 19 July [no. 207] 26 July; Izvestiya (USSR) 1962, 20 June, 12-13 July, 19-20 July.

DESCRIPTORS: *Industrial research, *Chemical industry, Industrial plants, Glass, *Plastics, Chemicals, Petroleum, *Fertilizers, *Synthetic fibers, Rubber.

Contents:
Irregularities at the Dorokhovo Glass Plant, by V. Vernikov
A new plastic type metal substitute is developed, by N. Aleksandrov
Building the Navoi Chemical Combine, by O. Bednyakov
Raw material problems of chemical industry in the Kuibyshevskii economic region, by S: Il'in
Increase the output of fertilizers and crop chemicals in Dzerzhinsk, by M. Ponomareva and others
Delays in constructing a rayon pulp plant near Lake Baikal, by L. Shinkarev
No more improvising tactics at the Kazan' rubber accessories plant, by F. Fedorov and others
Delays in the construction of the Middle-Volga Chemical Plant, by N. Koshelev
Production of caprolactam in Siberia has begun, by V. Davydchenkov
Utilize polymer wastes, by K. Moskatov.

Bloch, Rudolf.
PROCESS FOR THE STORAGE AND SENDING OF BROMINE IN THE SOLID FORM IN METAL CONTAINERS. [1962] 3p.
Order from OTS or SLA $1.10 62-16255

Trans. of German patent 694 408, 4 July 40.

DESCRIPTORS: *Bromine, Solids, Storage, Shipping, Containers, Metals.

Brdlik, P. M.
CONDENSATION OF WATER VAPOR FROM STATIONARY STEAM-GAS MIXTURES. 7 June 62 [11]p. 10 refs. JPRS: 14040.
Order from OTS or SLA $1.60 62-25049

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1959, v. 2, no. 3, p. 3-8.

DESCRIPTORS: *Water vapor, Condensation, Steam, Gases, Mixtures, Towers (Chemistry).

The results of experimental studies of the condensation of water vapor from stationary steam-air mixtures are presented. The generalization of the experimental data is presented, which makes it possible to obtain computational formulas. (Author)

Ciborowski, J. and Wronski, S.
CONTINUOUS CONDENSATION OF SUBLIMABLE MATERIALS IN A FLUIDIZED BED. Jan 62, 4p. 6 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Przemysl Chemiczny (Czechoslovakia) 1961, v. [17] (40), no. 8, p. 433ff.

DESCRIPTORS: *Heat exchangers, Thin films, Heat transfer, Mass transfer, Condensation, Sublimation, *Fluidized solids, *Chemical engineering.

Danese, Guido.
THE REMOVAL OF DUSTS FROM GASEOUS FLUIDS BY MEANS OF CYCLONES (La Separazione delle Polveri da un Fluido Mediante i Cicloni). [1960] [33]p. 12 refs.
Order from OTS or SLA $3.60 60-17588

Trans. of l'Ingegnere (Italy) 1954, v. 28, p. 1255-1260 and p. 1374-1384.

DESCRIPTORS: *Particles, *Separation, Gas flow, Fluid flow, Fluids, Gases, Industrial plants, *Atmosphere, *Purification, *Minerals, *Recovery, *Rare gases.

The influence is discussed of various constructive and functional parameters on the amount of separation obtained by a cyclone and on the respective loss of load. Because of complex facts tied to the tridimensional flux in the apparatus, exact values of these two elements are not generally predictable through computation unless they are based upon results deducted through systematic proofs in each specific case. A sketch of numerical application is given solely as an illustration. (Author)

Delik, L.
THE FLUIDISING IMPACT PROCESS FOR THE DRYING OF LOOSE GRANULAR MATERIAL. Sep 62.
Order from BISI £ 3 15s BISI-2927

Trans. of Chemie-Ingenieur-Technik (West Germany) 1960, v. 32 [no. 4] p. 253-257.

DESCRIPTORS: Materials, *Fluidized solids, *Gas flow, *Grains (Metallurgy), *Dehydrators.

Dykyj, J., Kl'ucovsky, P. and others.
HIGH TEMPERATURE CHLORINATION OF PROPYLENE IN A CYCLONIC REACTOR. Jan 62, 5p. 11 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Chemicky Prumysl (Czechoslovakia) 1961, v. 11 (36) no. 6, p. 281ff.

DESCRIPTORS: *Propenes, *Chlorination, Reactors, *Allyl radicals, Chlorides, High temperature research, *Chemical engineering.

Fridshtein, I. L., Zimina, N. A., and Vanyashina, K. A.
EFFECT OF REDUCTION AND OXIDATION ON THE ACTIVITY OF CHROMIA-ALUMINA CATALYSTS. Jan 62, 7p. 12 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2, no. 1, p. 103-111.

DESCRIPTORS: *Catalysts, *Aluminum compounds, Oxides, *Chromium catalysts, Oxidation-reduction reactions, *Synthetic rubber, Pentadienes, Butanes, Butenes, Towers (Chemistry), *Chemical engineering.

Gel'perin, N. I. and Assmus, M. G.
MASS TRANSFER IN INJECTOR EXTRACTION COLUMNS. Jan 62, 4p. 1 ref.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1961, no. 5, p. 348ff.

DESCRIPTORS: *Mass transfer, *Injectors, Towers (Chemistry), Xylenes, Acetic acids, Ethers, Water, *Chemical engineering.

Goldfarb, M. I. and Malinovskaya, T. A.
EXPERIENCE IN THE USE OF AUTOMATED FILTER PRESS FOR THE ISOLATION OF DYESTUFF SUSPENSIONS (Opyt Primeneniya Avtomatizirovannogo Filtpressa dlya Razdeleniya Suspenzii Krasitelei). Feb 62 [11]p. 6 refs. RTS 2031.
Order from OTS or SLA $1.60 62-24301

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1961, no. 6, p. 420-424.

DESCRIPTORS: *Dyes, Particles, Impurities, Separation, Solids, Liquids, Control, Automatic, *Porous filters.

The automated filter presses were studied in the Rubezhansk and Dorogomilov plants. The extensive application for the isolation of production suspensions "thioindigo orange KKh" and "sulphur dark-blue" dyestuffs confirmed the effectiveness of the automated filter presses. (Author)

Gratkowski, Hans-Wolf von.
GENERATION OF GASES FOR THE REDUCTION OF IRON ORES. [1960] 25p. 28 refs.
Order from SLA $2.60 62-16879

Trans. of Stahl und Eisen (West Germany) 1960, v. 80, no. 7, p. 397-407 (Verein Deutscher Eisenhüttenleute (West Germany). Berichte-329).
Another trans. is available from BISI £6 5s as BISI-1695 [1960].

DESCRIPTORS: *Gas generating systems, *Iron, Ores, Decomposition.

For abstract see Technical Translations 4: 94, 1960.

Grubitsch, Heribert.
METHOD AND DEVICE FOR STORING CHLORINE DIOXIDE. [1962] 3p.
Order from OTS or SLA $1.10 62-14766

Trans. of German patent specification 1,100,001 G 28119 IVa/12i, appl. 9 Oct 59, appl. pub and spec. issued 23 Feb 61.

DESCRIPTORS: *Chlorine compounds, *Dioxides, *Gas cylinders, Storage.

The method is characterized by the fact that liquid carbon dioxide is used as a solvent and the content of chlorine dioxide at normal temperature is adjusted to a maximum of 25% by weight. The liquid solution only is withdrawn from the pressurized cylinder and adjusted to the desired concentration of chlorine dioxide by vaporization in a current of air. The apparatus for carrying out the method consists in the main of the customary pressurized iron cylinder with suitable inlet and exit tubes. The portion of the surface coming in contact with the chlorine dioxide is plated with silver and preferably also coated with silver chloride.

Hobler, T.
CORRELATION OF EQUATIONS FOR LIQUID-PHASE MASS-TRANSFER COEFFICIENTS WITH WETTED PACKING. Jan 62, 3p. 5 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Przemysl Chemiczny (Czechoslovakia) 1961, v. [17](40) no. 7, p. 396ff.

DESCRIPTORS: *Mass transfer, Liquids, *Seals, Equations, Correlation techniques, *Chemical engineering.

Hou, T. P.
INDIAN AND JAPANESE AMMONIUM CHLORIDE PLANT EQUIPMENT AND LAYOUT AND EFFECTIVENESS OF AMMONIUM CHLORIDE AS FERTILIZER. [1962] 9p.
Order from OTS or SLA $1.10 62-16680

Trans. of Hua Hsueh Kung Yeh (Chinese People's Republic) 1957, no. 10, p. 49-51.
A partial trans. is available from OTS or SLA $1.10 as 61-20889 [1961] 4p.

DESCRIPTORS: *Chemical industry, India, Japan, *Ammonium radicals, *Chlorides, *Fertilizers, Effectiveness, Industrial equipment.

Kholin, I. I., Malinin, J. S., and Entin, S. B.
KINETICS OF THE BURNING PROCESS. Pt. I on the Effect of Barium Oxide on Clinker Formation. [1962] 8p. 8 refs.
Order from SLA $1.10 62-18011

Trans. of Silikat Technik (East Germany) 1961, v. 12, no. 6, p. 278-280.

DESCRIPTORS: *Cements, Manufacturing methods, Furnaces, *Barium compounds, Oxides, Combustion, *Reaction kinetics.

We studied the effect of a replacement of a part of CaO in the raw mix by an equimolecular BaO-quantity on the rate (kinetics) of clinker formation and the viscosity of the liquid phase. (Author)

Klang, M. and Dragut, A.
INITIATION OF PEROXIDATION OF KEROSENE BY IONIZING RADIATION. Jan 62, 6p. 14 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Revista de Chimie (Rumania) 1961, v. 12, no. 7, p. 387ff.

DESCRIPTORS: *Kerosene, *Hydroperoxides, Catalysis, Production, *Radiochemistry, Radiation effects, *Chemical engineering.

Kononov, V. A. and Evenchik, S. D.
MODERNIZATION OF THE PLANT AND INTENSIFICATION OF PRODUCTION OF CONCENTRATED PHOSPHOROUS FERTILIZER (Modernizatsiya Oborudovaniya i Intensifikatsiya Proizvodstva Kontsentrirovannykh Fosfornykh Udobrenii). Aug 61 [29]p. 21 refs. RTS 1903.
Order from OTS or SLA $2.60 61-27771

Trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1961, v. 6, no. 1, p. 2-16.

DESCRIPTORS: *Fertilizers, Industrial production, Phosphorous compounds, *Ammonium radicals, *Phosphates, *Phosphoric acids, Fluorides, Silicic acids, Towers (Chemistry).

Kothnig, M.
THE PRODUCTION OF PURE AROMATIC SUBSTANCES FROM COMMERCIAL HYDROCARBON MIXTURES BY EXTRACTION. [1962] 20p.
Order from ATS $25.50 ATS-15P62G

Trans. of Chemiker-Z[ei]t[un]g (West Germany) 1961, v. 85, no. 18, p. 672-682.

DESCRIPTORS: *Hydrocarbons, Mixtures, Production, *Solvent extraction

Kuznetsov, V. I.
BASES THÉORIQUES DE L'EXTRACTION DES ÉLÉMENTS CHIMIQUES [Osnovy Ekstraktsionnogo Izvlechiya Elementov] tr. by Fedorovsky. 29 Nov 61 [112]p. 460 refs. SEA Trans. no. R 1437 (text in French).
Order from OTS or SLA $9.60 62-25078

Trans. in French of Usp[ekhi] Khim[ii] (USSR) 1954, v. 23 [no. 6] p. 654-[696].
A trans. is available in English from LC or SLA mi$3.60, ph$9.30 as 59-17353, AERE Lib/Trans-532 9 Aug 55 [58]p.

DESCRIPTORS: *Chemical elements, Separation, Theory.

For abstract see Technical Translations 2: 573, 1959.

Laszlo, A. and Nemeth, A.
THE MAKFI PROCESS FOR PARTIAL OXIDATION OF METHANE. Jan 62, 2p. 3 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Partial trans. of Magyar Kem[ikusok] Lapja (Hungary) 1961 [v. 16] no. 6, p. 249-250.

DESCRIPTORS: *Methanes, *Oxidation, Production, Towers (Chemistry), *Chemical engineering.

Losev, I. P., Parlashkevich, N. Ya., and Andrianova L. D.
PLASTIC MASSES FROM ALKALI SLUDGE OBTAINED IN REFINING OF GASOLINES CRACKED BY THE K. K. DUBROVAI OXIDIZING METHOD. [1962] 3p. 5 refs.
Order from OTS or SLA $1.10 62-14101

[Condensed] trans. of Promyshlennost Organicheskoi Khimii (USSR) 1940, v. 7, no. 11, p. 618-621.

DESCRIPTORS: *Chemical waste, Alkali metals, *Plastics, *Gasoline, Decomposition.

Maslyanskii, G. N., Bursyan, N. R. and others.
ON CERTAIN TECHNOLOGICAL PROBLEMS IN CATALYTIC REFORMING. Jan 62, 6p.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Khim[iya] i Tekh[nologiya] Topliv i Masel (USSR) 1961 [v. 6] no. 8, p. 1ff.

DESCRIPTORS: *Catalysis, Platinum catalysts, *Petroleum, Hydrocarbons, Reactors, *Chemical engineering.

Mushenko, D. V., Levina, M. I. and others.
SEMICOMMERCIAL TRIAL OF CATALYTIC DEASPHALTING PROCESS FOR WHOLE CRUDE. [1962] 9p.
Order from ATS $8.60 ATS-94P61R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961, v. 6, no. 12, p. 1-7.

DESCRIPTORS: *Petroleum, *Asphalt, Separation, Catalysis.

Ostroushko, Yu. I., Buchikhin, P. I. and others.
LITHIUM, ITS CHEMISTRY AND TECHNOLOGY, tr. by Helen Basil. July 62, 276p. 38 refs.
Order from OTS $3.50 AEC-tr-4940

Trans. of mono. Litii, Ego Khimiya i Tekhnologiya, Moscow, 1960.

DESCRIPTORS: *Lithium, Chemistry, Industrial research, Lithium compounds, Chemical analysis, Minerals, Ores, Separation, Recovery, Production, Geochemistry, Metallurgy, *Rare earth elements.

The publication is intended for scientific collaborators, metallurgists and chemists working in the field of chemistry and technology of rare and dispersed elements, for engineers and technicians engaged in lithium production, and for students of universities and technological institutes. It is devoted to the description of main lithium minerals, geochemical and physicochemical properties of lithium and its compounds, the technology of lithium recovery from ores, as well as the metallurgy and analytical chemistry of lithium. It includes the following sections: Geochemistry and mineralogy of lithium; Chemistry of lithium and its compounds; Analytical chemistry of lithium; Separation of lithium ores; Methods of lithium ore dressing; and Metallurgy of lithium. The book was written on the basis of articles and books published from 1818 to 1958, both at home and abroad. (Soviet publisher's note)

Rudkovskii, D. M., Brunstein, B. A., and Klimenko, V. L.
THE PRODUCTION OF BUTYRALDEHYDES BY THE OXO SYNTHESIS METHOD. [1962] 8p. 5 refs.
Order from OTS or SLA $1.10 62-14634

Trans. of Khimicheskaya Promyshlennost' (USSR) 1961, no. 5 [p. 335-338].

DESCRIPTORS: *Butyl radicals, *Aldehydes, Butanols, Ethanols, Canavanine, Propanes, Production, *Oxo process.

An examination is made of the technical-economic characteristics of the production of butyraldehyde and the range of effective development is determined.

Ruthner, O.
PROCESS FOR RECOVERY AND REGENERATION OF PICKLING WASTE LIQUORS. 8 Oct 56, 6p.
Order from OTS or SLA $1.10 62-16402

Trans. of Austrian patent 176 414, starting of pat. life 15 Mar 53, issued 26 Oct 53, appl. [pub.] 6 Oct 56.

DESCRIPTORS: *Pickling, *Pickling compounds, Recovery, Regeneration, Chlorides, Iron compounds, Chemical reactions, Hydrogen, Gases, Separation, Decomposition, *Chemical waste.

The process is characterized by reacting with gaseous hydrogen chloride the pickling liquids which are enriched with metallic salts, preferably with iron salts, by separating the precipitated solid metallic chlorides and by decomposing them by means of hydrogen gas into metal and hydrogen chloride, which can again be applied for the precipitation of iron chloride from the pickling liquor.

Seke, V.
HARDENERS. [1962] 24p.
Order from ATS $29.75 ATS-25P59CR

Trans. of Kemija u Industriji (Bulgaria) 1961, v. 10, no. 7, p. F71-F80.

DESCRIPTORS: Chemical industry, *Additives, *Hardness.

Shumskii, K. P.
A NEW PRINCIPLE IN DESIGN OF EQUIPMENT FOR VOLUMETRIC CONDENSATION OF LIQUID VAPORS UNDER VACUUM. Jan 62, 5p. 5 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Khim[icheskoe] Mashinostroenie (USSR) 1961 [v. 3] no. 5, p. 29ff.

DESCRIPTORS: *Vapors, Mixtures, Separation, Condensation, *Electric fields, *Industrial equipment, *Laboratory equipment, Vacuum apparatus, *Chemical engineering.

Taganov, N. I.
DESIGN CALCULATIONS FOR CHEMICAL EQUIPMENT. Jan 62, 4p. 4 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1961, v. 34, no. 7, p. 1507ff.

DESCRIPTORS: *Industrial equipment, *Towers (Chemistry), Design, Absorption, Applied mathematics, *Chemical engineering.

Thormann, Kurt.
ON THE APPLICATION OF GAMMA RADIATION BARRIERS TO CHARGE-LEVEL CONTROL MEASUREMENTS IN LIQUID-CHLORINE VESSELS.
13 Feb 62 [6]p. JPRS: 12487.
Order from OTS or SLA $1.10 62-19155

Trans. of Automatisierung (East Germany) 1961, v. 4, no. 7, p. 298.

DESCRIPTORS: *Chlorine, Liquids, Liquefied gases, Storage, *Storage tanks, *Liquid level gages, Liquid level control, Gamma rays

Titkov, N. I., Varzanov, M. A. and others.
DRILLING WITH THE AID OF ELECTRICAL DISCHARGES IN LIQUID. [1962] 12p. 4 refs.
Order from OTS or SLA $1.60 62-16658

Trans. of Neftyanoe Khozyaistvo (USSR) 1957, v. 35, no. 10, p. 5-10.
Another trans. is available from ATS as ATS-85J19R, 7p.

DESCRIPTORS: *Well drilling, *Electric discharges, *Mining engineering, Liquids, Shock waves, Propagation, Rock, *Drills.

Vol'fkovich, S. I., Ionass, A. A. and others.
HYDROTHERMAL PROCESSING OF PHOSPHATES IN A CYCLONE FURNACE. Jan 62, 7p. 3 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1961, no. 6 [p. 394-399].
Another trans. is available from OTS or SLA $2.60 as 62-13405, JPRS-10911, 2 Nov 61 [25]p.

DESCRIPTORS: *Phosphates, Refineries, Purification, *Cyclone furnaces, *Chemical engineering.

Civil Engineering

Bakker, J.
MOISTURE IN FLAT ROOF JOISTS, tr. by D. A. Sinclair. 1962, 12p. NRCC Technical Trans. 1036.
Order from NRCC $1.00 NRCC C-4053

Trans. of Bouw (Netherlands) 1961 [v. 16] no. 41, p. 1290-1292.

DESCRIPTORS: *Beams, *Roofs, *Moisture, Failure (Mechanics), Structures, *Insulating materials, *Ventilation, *Construction materials industry.

Belli, U. Ya.
TRABAJOS DE ALLANAMIENTO DE SUPERFICIES ROCOSAS POR EL METODO DE LOS BARRENOS (Profil'naya Obrabotka Skal'nykh Poverkhnostei Vzryvnym Sposobom) (Rock Surface Levelling Work by the Blast Hole Method). 12p. CID: 62-35. (text in Spanish).
Order from OTS or ETC $1.10 62-26235

Trans. of Gidrotekhnicheskoe Stroitel'stvo (USSR) 1953 [v. 22] no. 11, p. 20.

DESCRIPTORS: *Earth moving equipment, Blast, Rock.

Monies, Finn.
WOOD IN ARCHITECTURE. Nov 61.
Order from McGraw-Hill Book Co., Inc., 330 W. 42d St., New York, 36, N. Y. $6.95

Trans. of mono. Trae og Arkitektur, Copenhagen, n. d.

DESCRIPTORS: *Civil engineering, Engineering, Materials, *Wood,

Nazin, V. V.
ERECTION OF THE REINFORCED CONCRETE STRUCTURES OF A COKE-CHEMICAL PLANT. 21 Mar 62 [28]p. JPRS: 13093.
Order from OTS or SLA $2.60 62-23625

Trans. of unidentified mono. (booklet) Moscow, 1960, 32p.

DESCRIPTORS: *Reinforced concrete, *Structures, Construction, Coke, Chemical industry, *Industrial plants

The author describes the reinforced concrete work associated with the construction of the Yasinovskiy coke-chemical plant and draws attention to the positive and negative aspects of the design and erection of the different structures involved. The advanced methods of reinforced concrete construction used in the second stage of the project (precast concrete, moving forms, sinking shafts, etc.) are examined particularly closely. (Author)

Voitkovskii, K. F.
AN EXPERIMENTAL ICE HOUSE (Opytnyi Ledyanoi Sklad) tr. by Robert Sholiton. Sep 61 [19]p. 1 ref. AmMetSoc-T-R-374.
Order from OTS or SLA $1.60 62-23491

Trans. of mono. Sezonnoe Promerzanie Gruntov i Primenenie L'da dlya Stroitel'nykh Tselei, Moscow, 1957, p. 88-100.

DESCRIPTORS: Ice, *Shelters, Thermal insulation, Construction, Deformation.

A four-year exploitation of an experimental snow-ice house (based on a design of M. M. Krylov) showed that even a house of relatively small dimensions has sufficient stability and, with proper maintenance, can be successfully used under the conditions prevailing in the Moscow area. In constructing a house of packed snow, the snow must be well-rammed, soaked with water, and frozen in order to avoid large deformations. The snow should become snow ice with a density of not less than 0.6 to 0.7 g/cm^3. In soil impermeable to water, it is necessary to build a drain for the outflow of water formed in the thawing of the ice structure, rain water, and brine from ice-salt cooling. The most vulnerable part of the ice structure is the point of juncture with the entryway. A decrease in the thickness of the heat-insulating covering increases the melting of the ice structure. With a covering of unfrozen sawdust about 1 m thick, the melting of the exterior of the ice mass during the summer period can reach 0.5 m. It is possible to maintain a stable temperature regime of about -1 or -2° in an ice house of small dimensions.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNAL: AUTOMATION AND RADIO ELECTRONICS, 1961, NOS. 1-2 AND 8-11. 10 Apr 62 [18]p. JPRS: 13428.
Order from OTS or SLA $1.60 62-24010

Trans. of selected abstracts from Referativnyi Zhurnal. Avtomatika i Radioelektronika (USSR) 1961, nos. 1-2 and 8-11.

DESCRIPTORS: *Bibliography, *Abstracts *Automation, *Computers, Electronic equipment, *Electronics, *Radio, Radio equipment, *Telephone communication systems, Test equipment, *Semiconductors, *China.

BROADCASTING AND TELEVISION. 30 June 60 [6]p. (3 figs. omitted). USASIA: SC-121e/60; JPRS: R-862-D
Order from OTS or SLA $1.10 60-31347

Trans. of die Technik (Germany) 1960 [v. 15] no. 3, Messeheft, p. 249-250.

DESCRIPTORS: Radio broadcasting, Television, *Television receivers, *Radio receivers, Design.

OHMMETERS: TECHNICAL REQUIREMENTS, tr. by J. K. Skwirzynski. Feb 61 [14]p. [DSIR] NLL M. 3327.
Order from OTS or SLA $1.60 62-23923

Trans. of USSR National Standard GOST 8038-60, gr P 33 (replacing GOST 8038-56) approved 4 May 60, issued 1 Jan 61.

DESCRIPTORS: *Ohmmeters, Standards, Test methods.

PHOTOMULTIPLIER. 30 June 60 [3]p. USASIA: SC-121f/60; JPRS: R-863-D.
Order from OTS or SLA $1.10 60-31348

Trans. of die Technik (Germany) 1960 [v. 15] no. 3, Messeheft, p. 254.

DESCRIPTORS: *Photomultipliers, Design.

POWER ENGINEERING IN THE USSR. 26 June 62 [858]p. (figs. omitted). JPRS: 14283.
Order from OTS or SLA $33.50 62-25624

Trans. of mono. Energetika SSSR [Sbornik Statei] Moscow, 1960 [378p.].

DESCRIPTORS: *Electric power production, Electrical engineering, Electrical equipment, Electricity, Electric machinery, Electric welding, Electrochemistry, Power plants, Power supplies, Electrical networks, Transmission lines, *Hydroelectric power systems, Electric industry, *Hydraulic power systems, Economics, Power, Engineering, Fuels, *Thermoelectricity, Thermoelectric generators, Steam turbines, Construction, Thermodynamics, Boilers, Heating, Personnel, Peat, Generators, Power drives, Automatic, Automation, *Electric furnaces, Steel, Iron alloys, Metallurgy, Railroads, Agriculture, Housing, Urban areas.

In the first part we give a general review of the development of electricity in the Soviet Union and a description of the role of V. I. Lenin as the founder of the electrification of the country. In the same section we considered problems in regionalization, and in the energy and fuel balance of the country. In the second section are discussed problems in the development of the electric-power base of our country: heat-power engineering and steam supply, hydroelectric power, and power systems. In the same section we consider methods of power construction, problems in the developments of designs, and training of power-engineering cadres. In the third section we describe the development of power machinery construction and the electric industry as a technical basis for the electrification of our country. We consider problems of boiler construction, and steam and hydraulic turbine construction. The fourth section of the collection of the national economy of the country - the most important branches of industry (electrometallurgy and electrochemistry, automatization and electric drive, electrothermy and electric welding), railroad transport, and agriculture. (I. T. Novikov)

SURGE DIVERTERS FOR PROTECTING THE INSULATION OF A. C. ELECTRICAL EQUIPMENT FOR VOLTAGES FROM 3 TO 220 kV (Razryadniki Ventil'nye dlya Zashchity Izolyatsii Elektrooborudovaniya Peremennogo Toka Napryazheniem ot 3 do 220 kV). 18 May 61 [14]p. Trafford Park Ref. T. P./T. 2788; [DSIR] NLL M. 3459.
Order from OTS or SLA $1.60 62-24896

Trans. of All-Union State Standard GOST 8934-58, gr. E72, introduced by the Leningrad Branch of the State Electroceramic Research Institute, 1 Jan 60, ratified 26 Dec 58.

DESCRIPTORS: *Electrical equipment, Alternating current, *Voltages, *Electric insulation, Standards, Electrical networks, Transmission lines, Safety devices.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 24. 4 Sep 62 [15]p. JPRS: 15092.
Order from OTS or SLA $1.60 62-32880

Trans. of Vestnik Elektropromyshlennosti (USSR) 1962 [v. 33] no. 5, p. 77-80; and Ekonomicheskaya Gazeta (USSR) 1962, no. 22[43] p. 27.

DESCRIPTORS: *Industrial production, *Electrical equipment, *Relays, *Electric power production, Generators, Electric motors, Transformers.

Contents:
New relays
Shortcomings in the production of heavy power equipment, by A. Krikunchik.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 25. 24 Sep 62 [20]p. JPRS: 15401.
Order from OTS or SLA $1.60 62-33124

Trans. of Sotsialisticheskii Trud (USSR) 1962 [v. 7] no. 1, p. 50-52 and Vestnik Elektropromyshlennosti (USSR) 1962 [v. 33] no. 6, p. 1-3.

DESCRIPTORS: *Industrial research, *Electrical equipment, Electric machinery, Quality control, Electrical industry, Electric cables, Cables, Production.

Contents:
Moscow plants plan to raise quality and durability of electric machinery, by N. Fomichev
Achievements of the cable manufacturing industry, by K. A. Lyubimov.

Andreasson, Anders.
MICROWAVE-CONTROLS FOR POWER-STATION OPERATION. [1962] 8p. (formulae figs. omitted) 8 refs.
Order from SLA $1.10 62-16914

Trans. of Teknisk Tidskrift (Sweden) 1953 [v. 83] 5 May, p. 381-385.

DESCRIPTORS: *Power plants, Operation, Control systems, Microwaves, *Microwave relay systems, Remote control systems.

Ardab'evskii, A. I., Voropaeva, V. G., and Grineva, K. I.
ANTENNA IN THE FORM OF PARABOLOID OF ROTATION. 27 Mar 62 [15]p. 8 refs. USASIA Trans. Log no. 1296 RR.
Order from OTS or SLA $1.60 62-24055

Trans. of mono. Manual of SHF Antenna Design [Moscow] 1957, chap. III.

DESCRIPTORS: *Parabolic antennas, Antennas, Design, Reflectors, Antenna radiation patterns, Superhigh frequency.

Arenzon, S. I. and Malkin, Kh. R.
LINEAS DE CABLES DE 110 Y 220 kV A ELEVADA PRESION EN TUBOS DE ACERO (Kabel'nye Linii 110 i 220 kv Vysokogo Davleniya v Stal'nykh Trubakh) (High Pressure 110 and 220 kV Cables in Steel Tubes). 17p. CID: 62-17. (text in Spanish).
Order from OTS or ETC $1.30 62-26217

Trans. of Elektricheskie Stantsii (USSR) 1960, [v. 31] no. 4, p. 65-69.

DESCRIPTORS: *Electric cables, Steel tubing.

Beckmann, B.
THE SATELLITE OBSERVATIONS AND THEIR FIRST RESULTS FOR THE KNOWLEDGE OF RADIO PROPAGATION. 7 July 60 [35]p. (figs. omitted) 5 refs. USASIA: SC-114/60; JPRS: R-839-D.
Order from OTS or SLA $3.60 60-31326

Trans. from NTZ: Nachrichtentechnische Zeitschrift (West Germany) 1959 [v. 12] no. 7.

DESCRIPTORS: *Satellite vehicle research, *Radio transmission, Radio fields, Doppler systems, Bearing finding, Radio interferometers, Radar scanning.

Bogoroditskii, N. P. and Fridberg, N.
NUEVAS REALIZACIONES EN EL CAMPO DE LOS CONDENSADORES CERAMICOS DE BAJA TENSION (Novye Razrabotki v Oblasti Keramicheskikh Kondensatorov Nizkogo Napryazheniya) (Recent Advances in the Field of Low Voltage Ceramic Condensers). 25p. CID: 62-70. (text in Spanish).
Order from OTS or ETC $1.65 62-26270

Trans. of Elektrichestvo (USSR) 1955, no. 6, p. 37-42 Another trans. is available in English from SLA as R-3689.

DESCRIPTORS: *Ceramic capacitors.

Braun, H.
MAGNETIC AND DIELECTRIC AMPLIFIERS. [1962] 13p. (figs. omitted) 11 refs.
Order from SLA $1.60 62-16938

Trans. of V[erein] D[eutscher] I[ngenieure]. Z[eitschrift] (West Germany) 1953, v. 95, p. 335-340.

DESCRIPTORS: *Magnetic amplifiers, *Dielectric amplifiers, Amplifiers, Design, Operation.

Breido, I. Ya. and Yankin, G. M.
GAS-DISCHARGE COUNTER TUBES. 28 Aug 62 [12]p. 20 refs. [USASIA] Trans. Log no. 1030.
Order from OTS or SLA $1.60 62-32906

Trans. of #Radiotekhnika (USSR) 1957 [v. 12, no. 2] p. 65-70.

DESCRIPTORS: *Gas discharges, *Discharge tubes, Construction, Operation, *Electron tubes.

(A survey is made of counter tubes, which have found wide application, the operation of which is based on the phenomenon of the directional shift of the gas discharge zone. Principle attention is given to decade counter tubes - "decatrons") (Author)

Danilevskii, Yu. G. and Tikhanov, G. P.
PHOTOTELEGRAPH EQUIPMENT TYPE FTA-M2. [1962] [10]p. [USASIA] Trans. Log no. 1003.
Order from OTS or SLA $1.10 62-32648

Trans. of #Vestnik Svyazi (USSR) 1958 [v. 18] no. 8[221] p. 3-5.

DESCRIPTORS: *Facsimile communication systems, Telegraph systems, *Telegraph equipment, Design, Construction, Operation.

The article describes the technical characteristics, construction, design and principal of operation of phototelegraph equipment type FPA-M2 (Author)

Davidson, A. M.
EXPERIENCIAS SOBRE RECTIFICADO RAPIDO (Iz Opyta Skorostnogo Shlifovaniya) (Experiments on High Speed Rectification). 10p. CID: 62-98. (text in Spanish).
Order from OTS or ETC $1.00 62-26298

Trans. of Stanki i Instrument (USSR) 1954 [v. 25] no. 11, p. 10.

DESCRIPTORS: *Rectifiers.

Dorokhov, A. P.
PARABOLIC ANTENNAS. 2 May 62 [27]p. USASIA Trans. Log no. 1310.
Order from OTS or SLA $2.60 62-24499

Trans. of mono. [Raschet i Konstruirovanie Antenno-Fidernykh Ustroistv] (Design and Construction of Antenna Feeders) Kharkov, 1960, chap. 3. V.

DESCRIPTORS: *Parabolic antennas, Antennas, *Transmission lines, Design, Construction, Operation, Antenna radiation patterns, Reflectors.

Gast, T[heodor] and Alpers, E[rika].
PONDEROMETRIC DETERMINATION OF DIELECTRIC MAGNITUDES. 30 Dec 50, 5p. (figs. equations refs. omitted).
Order from SLA $1.10 62-16973

Trans. of Zeitschrift für Angewandte Physik (West Germany) 1948, v. 1, no. 5, p. 228-232.
Other translations are available from SLA $1.10 ea. as 62-10375 [1961] 4p. and 62-10376 [1961] 5p.

DESCRIPTORS: *Dielectric properties, Determination, Insulating materials, Electric insulation, Laboratory equipment.

Gast, Th.
TRENDS IN THE DEVELOPMENT OF BRIDGE INSTRUMENTS FOR DIELECTRIC MEASUREMENTS. [1962] 12p. (refs. figs. omitted).
Order from SLA $1.60 62-16974

Trans. of Z[ei]ts[chrift] für Angew[andte] Physik (West Germany) 1950, v. 2, no. 1, p. 41-48.

DESCRIPTORS: Alternating current, *Electric bridges, Capacitance bridges, Design, Dielectrics, *Dielectric properties, Measurement, Recording devices.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET ELECTRICAL EQUIPMENT (22). 23 July 62 [21]p. JPRS: 14555.
Order from OTS or SLA $2.60 62-32050

Trans. of Energetika i Elektrotekhnicheskaya Promyshlennost' (USSR) 1962, no. 1, p. 13-17; Narodnoe Khozyaistvo Uzbekistana (USSR) 1962 [v. 4] no. 2, p. 47-48; Vestnik Elektropromyshlennosti (USSR) 1962 [v. 33] no. 4, p. 8-11.

DESCRIPTORS: *Industrial research, *Electrical equipment, *Transformers, *Electric power production, *Power supplies, Voltage, Transmission lines, Electric machinery, Electrical engineering, Machine tools, Industrial production, Pulse generators

Contents:
Transformers and auto-transformers for 330-kv power lines, by V. M. Sukhanov
Development of the electrical-equipment and instrument-making industry in Uzbekistan
Research and development activities at the Leningrad affiliate of the All-Union Electrical Engineering Institute imeni V. I. Lenin, by L. S. Petrov

Gosiewski, A.
OPTIMUM SECOND ORDER RELAY SERVOMECHANISMS. 26 Dec 61 [59]p. 27 refs. JPRS: 11715.
Order from OTS or SLA $5.60 62-19619

Trans. of Rozprawy Elektrotechniczne (Poland) 1961, v. 7, no. 1 [p. 17-67].

DESCRIPTORS: Automatic, *Control systems, *Servomechanisms, Relay, Synthesis.

In this work are shown and applied the elements of a systematized theory of optimal automatic control systems. These systems are characterized by the least transition time. The applications are to synthesis and analysis of basic switching servomechanisms of the second order where the servomotor is controlled via current and voltage. Theoretical considerations were based on several simplifying assumptions which. although idealizing the investigated servomechanisms, did not deform qualitatively the considered phenomena. The analysis of the systems used the method of the phase plane, with particular emphasis on problems hitherto incompletely considered in the literature, as, for example, the steady state problem, and on the physical interpretation of the mathematical formulation. (Author)

Kirillova, F. M.
THE PROBLEM OF THE EXISTENCE OF OPTIMAL TRAJECTORIES OF NONLINEAR SYSTEMS (K Probleme Sushchestvovaniya Optimal'nykh Traektorii Nelineinykh Sistem). 7 July 61 [22]p. 11 refs. JPRS: 9644.
Order from OTS or SLA $2.60 61-27227

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Matematika (USSR) 1961, no. 2[21] p. 41-53.

DESCRIPTORS: *Control systems, *Nonlinear systems, *Differential equations, Solutions, Inequalities, Equations of motion

Korobkov, V. K.
REALIZATION OF SYMMETRIC FUNCTIONS IN THE CLASS OF II (SERIES-PARALLEL) CIRCUITS. [1961] 6p. 3 refs. MDF K-139.
Order from OTS $0.50 62-11591

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1956, v. 109, p. 260-263.

DESCRIPTORS: *Switching circuits, Circuits, *Special functions, Mathematical logic

The class of symmetric functions is investigated. The problem of expresssing the functions through a certain basis function with minimum number of occurrences of variables is difficulty and we are obliged to be satisfied with a solution close, in a certain sense, to the minimum. A method is given of constructing formulas for symmetric functions by using the operations &, V and - and it is shown that each symmetric function, dependent on n variables, can be described by means of the formulas of this kind with a number of occurrences of variables of the order of

$$c \cdot \log_2 n \cdot n^{1/2 \log_2 n + 1/2}.$$ (Author)

Kudryavtsev, R. A.
PHOTOTELEGRAPH EQUIPMENT FTAP. [1962] [8]p. USASIA] Trans. Log no. 1038.
Order from OTS or SLA $1.10 62-32907

Trans. of #Vestnik Svyazi (USSR) 1958 [v. 18] no. 10[223] p. 3-4.

DESCRIPTORS: *Facsimile communication systems, Telegraph systems, *Telegraph equipment, Design, Construction, Operation.

Man'kin, E. A.
DESIGNING REACTORS WITH A STEEL MAGNET CIRCUIT AND AIR GAPS (Raschet Reaktorov so Stal'nym Magnitoprovodom i Zazorami). 14 July 61 [21]p. Trafford Park trans. no. 2916; [DSIR] NLL M.3461.
Order from OTS or SLA $2.60 62-24810

Trans. of Elektrichestvo (USSR) 1959, no. 7, p. 35-41.

DESCRIPTORS: *Saturable reactors, Design, *Magnetic fields, Circular coils, Magnetic cores, Reactor cores, Steel, Magnets, Circuits, Magnetic properties, Electrical engineering, Electrical equipment.

Data are presented on the standard capacity of a reactor; the magnetic field of a reactor; the general course of the calculation; a comparison of the data of the calculation with those of the experiment; and the field of the rational application of a reactor with a steel magnetic circuit.

Martynovskii, V. S. and Naer, V. A.
SEMICONDUCTOR HEAT-TRANSFER INTENSIFIERS AND HEAT INSULATORS. 18 Apr 62 [10]p. 2 refs. FTD-TT-62-167.
Order from OTS or SLA $1.10 62-25731

Unedited rough draft trans. of Kholodil'naya Tekhnika (USSR) 1961 [v. 38] no. 3, p. 4-7.

DESCRIPTORS: *Semiconductors, *Heat transfer, Intensity, *Thermopiles, *Thermal insulation, Generators, Thermoelectricity, Electric power production, Thermodynamics.

Semiconductor thermopiles can be used not only for the generation of heat or cold, but also as heat-transfer intensifiers. The power efficiency of the semiconductor intensifier is rather high. Even in the absence of an external current source, only in the presence of closed-circuit current, the additional quantity of heat which is transferable from a heated medium to a cold one is substantially high. The use of a semiconductor intensifier is especially effective when the temperature difference between the heat-transfer media is insignificant. A semiconductor thermopile can also serve as a heat insulator. (Author)

Maslova, L. V., Matveev, O. A., Afanas'ev, V. F.
ELEKTRISCHES POLIEREN VON n-LEITENDEM SILIZIUM (Electrical Polishing of n-conducting Silicon). (text in German).
Order from T.I.B. $1.55

Trans. of Fizika Tverdogo Tela (USSR) 1961, v. 3, no. 9, p. 2699-2702.

DESCRIPTORS: *Silicon, *Electrolytic polishing.

Michovski, V. I. and Tobuz, E. N.
AUTOMATISCHE MAGNETVERSTARKERREGELUNG DER STROMDICHTE IN GALVANISCHEN BÄDERN (Automatic Magnet Amplifying Device of the Current Density in Galvanic Baths). 2p. (text in German).
Order from T.I.B. $1.40

Trans. of Promyshlennaya Energetika (USSR) 1961 [v. 16] no. 4.

DESCRIPTORS: *Current amplifiers, *Electrolysis.

Movshovich, M. E.
PARAMETERS OF A SEMICONDUCTOR TRIODE UNDER FREQUENCY CONVERSION CONDITIONS. 15 Aug 61 [15]p. 2 refs. USASIA Trans. Log no. 1214.
Order from OTS or SLA $1.60 62-32610

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 12, p. 29-37.

DESCRIPTORS: *Semiconductors, *Triodes, Frequency, Low frequency, High frequency, Frequency converters, Amplitude modulation.

The article deals with the relationships between parameters of a semiconductor triode under conditions of amplification and conversion. It evaluates analytically the characteristics of the simplest theoretical model, and the possible quantitative relationships between the aforesaid parameters. These relationships are also established experimentally and in more exact terms. (Author)

Pershits, Ya.
THE INFLUENCE OF IMPURITIES UPON THE ELECTROCONDUCTIVITY OF DIELECTRICS AT HIGH TEMPERATURES. [1962] [17]p.
Order from OTS or SLA $1.60 62-10938

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Friziki (USSR) 1947, v. 17, no. 3, p. 251-259. Another trans. is available from LC or SLA mi$2.40, ph$3.30 as 61-10799 [1960] 19p.

DESCRIPTORS: *Dielectrics, Conductivity, Impurities, Temperature.

For abstract see Technical Translations 5: 496, 1961.

Pierrot, Andre, Lescroel, Yves, and Bernard, Nicolle.
DIELECTRIC MATERIALS AND METHODS FOR THEIR MANUFACTURE. [1962] 6p.
Order from OTS or SLA $1.10 62-16372

Trans. of French patent 1,264,494, internat. cl. H 01 g (P. V. no. 822,800) by Lignes Telegraphiques et Telephoniques, appl. 30 Mar 60, granted by law of 15 May 61 (Bulletin Officiel de la Propriété Industrielle (France) 1961, no. 25).

DESCRIPTORS: *Dielectrics, Manufacturing methods, Iron compounds, Tantalum compounds, Oxides.

Povarov, G. N.
ON A METHOD OF ANALYZING SYMMETRIC SWITCHING CIRCUITS [O Metodike Analiza Simmetricheskikh Kontaktnykh Skhen]. [1961] [5]p. 11 refs. MDF P-120.
Order from OTS or SLA $1.10 62-33207

Trans. of Avto[matiki] i Tele[mekhanika] (USSR) 1955, v. 16, no. 4, p. 364-365.

DESCRIPTORS: *Switching circuits, Circuits, Electrical networks, Analysis, Special functions

Group-theoretical results are used to analyze symmetric switching circuits. (Author)

Povarov, G. N.
ON THE SYNTHESIS OF MULTI-TERMINAL SWITCHING NETWORKS. [1961] [7]p. 3 refs. MDF P-122.
Order from OTS or SLA $1.10 62-33209

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1954, v. 94, no. 6, p. 1075-1078.

DESCRIPTORS: *Switching circuits, Circuits, *Electrical networks, Synthesis, Special functions, Design

Two new applications of the universal multi-terminal network method are described in this note: to design multi-terminal switching networks of a certain general kind and to design symmetric multi-terminal switching networks. Certain improvements in the results of Shannon are given for two-terminal switching networks. (Author) (See also 62-11409)

Povarov, G. N.
TO THE MATHEMATICAL THEORY OF THE SYNTHESIS OF (1,k) TERMINAL SWITCHING NETWORKS. [1961] [6]p. 5 refs. MDF P-127.
Order from OTS or SLA $1.10 62-33210

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1956, v. 11, no. 1, p. 102-104.

DESCRIPTORS: *Switching circuits, Circuits, *Electrical networks, Synthesis, Special functions, Theory.

Certain theorems on the construction of (1,k) -terminal switching networks are explained. These theorems permit the number of switches in (1,k) -terminal switching networks to be estimated for large k. (See also 62-11409) (Author)

Povarov, G. N.
TO THE STUDY OF SYMMETRIC BOOLEAN FUNCTIONS FROM THE RELAY SWITCHING CIRCUIT THEORY VIEWPOINT. [1961] [6]p. 4 refs. MDF P-121.
Order from OTS or SLA $1.10 62-33208

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 104, no. 2, p. 183-185.

DESCRIPTORS: *Special functions, Electric relays, *Switching circuits, Electrical networks.

Previous calculations (Akad. Nauk SSSR Doklady 94: 801, 1954; 94: 1075, 1954; and 100: 909, 1955; respectively available in translation from OTS or SLA as 62-16089, 62-33209, and 62-11409) are extended and a survey is given of symmetric two-terminal networks that can be constructed with the expenditure of either only short -circuited or only open switches for each receiving element.

Sack, R. and Weigold, S.
TEMPERATURE RISE MEASUREMENTS ON WEATHER-AND EXPLOSIONPROOF ELECTRICAL PRODUCTS BY MEANS OF THERMO-ELEMENTS. 13 Feb 62 [13]p. JPRS: 12486.
Order from OTS or SLA $1.60 62-19167

Partial trans. (some parts summarized) of Automatisierung (East Germany) 1961, v. 4, no. 7, p. 281-286.

DESCRIPTORS: *Electrical equipment, Weatherproofing, Explosion damage, Test equipment, *Temperature sensitive elements, Thermometers, Low temperature alloys, Resistance thermometers, *Thermocouples.

Samsonov, P. D. and Kuznetsova, N. G.
CONCERNING CERTAIN FACTORS THAT DETERMINE THE ELECTRICAL PROPERTIES OF THE LEAD ACCUMULATOR. I. PORE STRUCTURE AND UTILIZATION COEFFICIENT OF THE ACTIVE COMPOSITIONS FOR ACCUMULATORS. [1962] 39p.
Order from K-H $48.75 K-H 8215

Trans. of Zhurnal Prikladnoi Khimii (USSR) 1941, v. 14, p. 317-334.
Another trans. is available from LC or SLA mi$3.30, ph$7.80 as 59-10133 [1958, 45]p.

DESCRIPTORS: *Storage batteries, Materials, *Lead, Electrical properties.

For abstract see Technical Translations 2: 195, 1959.

Savitskii, B. I.
CERTAIN PROBLEMS INVOLVING THE OPERATION OF A RATIO DETECTOR. 15 Aug 61 [16]p. 4 refs. USASIA Trans. Log no. 1213.
Order from OTS or SLA $1.60 62-32609

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 12, p. 19-28.

DESCRIPTORS: *Amplitude modulation, *Signal-to-noise ratio, Detection, Suppressors, Phase transformers, Circuits, Attenuation, Operation.

A method is given for derivation by means of simplified expressions of conditions for obtaining linear static characteristics of a modulation mode converter. The part played by bridge balancing of AM detection in the relative suppression of AM is disclosed. The necessity of increasing suppression of AM on the edges of the operating band is indicated. It is proven that this increase in suppression can be obtained at the expense of compensation of AM action, by a dynamic change in the effective attenuation of the second circuit of the phase-shifting transformer. (Author)

Savitskii, G. A.
CERTAIN PROBLEMS OF ANTENNA DESIGN. 15 Aug 61 [8]p. USASIA Trans. Log no. 1218.
Order from OTS or SLA $1.10 62-32614

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 12, p. 69-71.

DESCRIPTORS: *Antennas, Design, Installation, Costs, Reduction, Statistical processes.

Problems of antenna construction design based on the application of methods of mathematical statistics are discussed. A substantial reduction in the cost of antenna installations is possible. The antenna structures should be as effective in performance as radiotechnical antenna parameters.

Semler, Alois.
"WATT" GLOW-BLUBS- AND ELECTRICITY CORPORATION IN VIENNA: ARRANGEMENT FOR PRODUCING LIGHT. [1962] 7p. 4 refs.
Order from OTS or SLA $1.10 62-16420

Trans. of Austrian patent 176 609, cl. 21 f 46/01, appl. 2 May 52, start of pat. duration 15 Apr 53, granted 10 Nov 53.

DESCRIPTORS: *Light, Sources, Production, Capacitors, Electrodes, Luminescence, Phosphors, Dielectrics, Electrical conductance.

An apparatus is suggested for producing light, consisting of two preferably surface-like condenser electrodes, of which at least one is transparent, and an electrically luminescent dieelectric layer situated between these. At least one of the condenser electrodes enclosing the luminescent layer is made of a transparent synthetic whose mass is an electric conductor.

Shakhanov, V. S.
THE GENERAL ALGORITHMS OF A COMPUTING AND CONTROLLING ELECTRONIC DIGITAL MACHINE FOR THE OPTIMUM ECONOMIC PLANNING OF THE OPERATING MODES OF COMPLEX POWER SYSTEMS. 13 July 62 [46]p. 17 refs.
JPRS: 14461.
Order from OTS or SLA $4.60 62-25998

Trans. of Elektrichestvo (USSR) 1962, no. 4, p. 7-19.

DESCRIPTORS: *Power plants, Operation, Economics, Control, *Digital computers, Computers, Scheduling.

A general algorithm of a computing and controlling digital machine is offered for the optimum economic planning of the daily operating modes of a complex power systems. This algorithm was worked out at the Institute of Electronic Controlling Machines (INEUM). The greater portion of the elements of this algorithm was tested and positive results were obtained in this process for the actual daily operating modes of the Consolidated Southern Power System on the universal digital machine M-2 at the INEUM. (Author)

Shatrovskii, L. I.
A NUMERICAL METHOD FOR SOLVING OPTIMAL CONTROL PROBLEMS. 30 July 62 [8]p.
JPRS: 14630.
Order from OTS or SLA $1.10 62-32073

Trans. of Zhurnal Vychislitel'noi Matematiki i Matematicheskoi Fiziki (USSR) 1962, v. 2, no. 3, p. 488-491.

DESCRIPTORS: Control, *Control systems, *Numerical methods and procedures, Differential equations, Solutions.

Shteinshleiger, V. B.
QUANTUM PARAMAGNETIC AMPLIFIERS OF ULTRA HIGH FREQUENCIES. 15 Aug 61 [13]p. 2 refs. USASIA Trans. Log no. 1215.
Order from OTS or SLA $1.60 62-32611

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 12, p. 38-44.

DESCRIPTORS: *Paramagnetic amplifiers, Amplifiers, Ultra high frequency, Operation, Paramagnetic crystals, Paramagnetic resonance, Resonance absorption.

This paper investigates the physical principles of performance of quantum paramagnetic amplifiers, describes their arrangement and presents the corresponding quantitative characteristics. (Author)

Shteinshleiger, V. B.
QUANTUM PARAMAGNETIC AMPLIFIERS WITH COUPLED RESONATORS, tr. by B. W. Kuvshinoff. 5 Sep 62, 4p. 2 refs. APL/JHU TG 230-T327.
Order from OTS $0.50 62-11779

Trans. of #Radiotekhnika i Elektronika (USSR) 1962, v. 7, no. 7, p. 1253-1254.

DESCRIPTORS: *Paramagnetic amplifiers, Amplifiers, Paramagnetic resonance, Resonance.

Parameters of the quantum paramagnetic resonant amplifier with coupled active resonators (Radiotekhnika i Elektronika 4: 1947, 1959) are compared with the parameters of the quantum paramagnetic amplifier with coupled passive resonators as described by J. J. Cook et al. (Proc. IRE 49: 768, 1961). Active resonators result in a somewhat broader bandpass than passive resonators, and the stability is usually greater.

Slavik, J. B., Tichy, J. and Vondrue, K.
DIE LÄRMVERHÄLTNISSE IN WÄRMEKRAFTWERKEN (The Noise-conditions in Heat-engine Generating Stations). (text in German).
Order from T.I.B. $1.40

Trans. of Énergetika (Czechoslovakia) 1958, v. 8, no. 12, p. 553.

DESCRIPTORS: *Noise, *Heat-engines, Electric power production.

Slovikovski, G.
EINIGE BESONDERE EIGENSCHAFTEN DER TRANSFORMATORISOLATION (Some Special Properties of the Transformer-insulation). 13p. (text in German).
Order from T.I.B. $1.85

Trans. of Elektrichestvo (USSR) 1961, no. 6, p. 83-87.

DESCRIPTORS: *Transformer, *Electric insulation.

Smirnov, M. V.
TESTING THE INTER-TURN INSULATION OF THE WINDINGS OF ELECTRIC MOTORS UNDER OPERATING CONDITIONS (Ispytanie Vitkovoi Izolyatsii Obmotok Elektrodvigatelei v Usloviyakh Ekspluatatsii). [1962] [8]p. 3 refs. Trafford Park trans. no. 2967; [DSIR] NLL M. 3465.
Order from OTS or SLA $1.10 62-24817

Trans. of Elektrichestvo (USSR) 1955, no. 5, p. 49-51.

DESCRIPTORS: *Electric motors, *Electric insulation, *Electric machinery, Maintenance, Test methods, Test equipment, Voltage, Commutators

Stepanek, K.
MAGNETIC MEASURING DEVICES (Magneticka Meritka) tr. by Vedral. [1962] 26p. (27 figs. omitted). H-7001.
Order from OTS or SLA $2.60 62-25200

Trans. of Strojirenstvi (Czechoslovakia) 1960 [v. 10] no. 2, p. 139-149.

DESCRIPTORS: Measurement, Instrumentation, Electromagnetic waves, *Magnetic recording systems, Machines, Industrial equipment, Gears, Cutting tools, Electronic equipment.

This article deals with magnetic devices which are gradually replacing the present measuring techniques using gauges or graduated devices by introducing a new method based on determining units of length or angle from the length of magnetically recorded waves. This new method is particularly suited for measurements employed in the production of indexing devices, in measurement of angles, in precision measurement of gearing and transmissions, checking the accuracy of gear cutting (milling, shaping, etc.) machinery, and in measuring gears. The various applications of this method are dealt with in the article in close detail. (Author)

Strejc, V., Bodner, V. A. and others.
THE THEORY OF AUTONOMITY AND INVARIANCE OF MULTIPARAMETER SYSTEMS OF CONTROL HAVING DIGITAL CONTROLLERS [AND] THE THEORY OF INERTIAL-PENDULUM SYSTEMS. 5 Mar 62 [57]p. 19 refs. FTD-TT-62-13.
Order from OTS or SLA $5.60 62-24931

Unedited rough draft trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Energetika i Avtomatika, 1961, no. 5, p. 51-71 and #163-173.
#Abstract trans. is available from OTS or SLA $1.10 as 62-19119, AID-62-172, 29 Dec 61, 2p.

DESCRIPTORS: Automatic, Control, *Control systems, Digital computers, Computers, *Inertial guidance, *Inertial navigation, Instrumentation, Construction, Theory.

The paper by Strejc and Ruzicka considers multiparameter systems of control having a finite number of steps in control, and examples are given of autonomic and invariance systems of control. The paper of Bodner and Seleznez discusses (1) construction principles of inertial-pendulum systems, (2) the introduction of external navigation information into the inertial-pendulum system, and (3) methods for reducing disturbing momenta.

Tipugin, V. N. and Veitsel, V. A.
RADIO CONTROL. 21 Sep 62, 831p. 125 refs. JPRS: 15381.
Order from OTS $9.00 62-11772

Trans. of mono. Radioupravlenie, Moscow, 1962, 750p.

DESCRIPTORS: Radio, Control, *Control systems, Guided missiles, Radio transmission, Telemeter systems, Remote control systems, Radio navigation, Radio homing, Pilotless aircraft, Ballistics, Rockets, Satellite vehicles, Design, Theory, Effectiveness, *Radio equipment.

Contents:
Foreward
Principles of missile control: guidance methods
Methods of radio control and radio sighting
Example of ground-ground missile radio control

Structure of radio control systems and general design principles
Principal modulation methods used in radio lines for control systems and in radiotelemetry
Radiotelemetering systems
Radio remote control systems and lines
Systems and lines for radio remote guidance
Systems and radio lines for homing
Radio control of ballistic rockets: cosmic rockets and earth satellites
Effectiveness of radio control systems.

Vasenin, P. M.
DEPENDENCIA DE LA SOBRETENSION RESPECTO AL MATERIAL DEL ELECTRODO (Zavisimost' Perenapryazheniya ot Materiala Elektroda) (Dependence of Over Voltage on Electrode Material). 28p. 58 refs. CID: 62-73. (text in Spanish).
Order from OTS or ETC $1.75 62-26273

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1956 [v. 30] no. 3, p. 629-638.

DESCRIPTORS: Voltage, *Electrodes.

Vol'kenshtein, A. A.
METODO DE DETERMINACION DE LAS CARACTERISTICAS LUMINOSAS DE LAS LAMPARAS DE INCANDESCENCIA, EN FUNCION DE LA TENSION (Metod Opredeleniya Svetovykh Kharakteristik Lamp Nakalivaniya v Zavisimosti ot Naprazheniya) (Method for the Determination of Luminous Characteristics of Incandescent Bulbs in Terms of Voltage) 18p. 2 refs. CID: 62-79. (text in Spanish).
Order from OTS or ETC $1.30 62-26279

Trans. of Elektrichestvo (USSR) 1954, no. 11, p. 73-76.
Another trans. is available in English from Indian National Scientific Documentation Centre, Hillside Road, New Delhi, 12, India.

DESCRIPTORS: *Incandescent lamps, Luminiscence, Determination, Voltage.

Voskresenskii, V. F.
EXPERIENCIAS DE LA EXPLOTACION DE LOS AISLADORES TIPO SP-110 (Opyt Ekspluatatsii Sterzhnevykh Izolyatorov Tipa SP-110) (Experiments on the Utilisation of Type SP-110 Insulators). 6p.
CID: 62-83. (text in Spanish).
Order from OTS or ETC $0.85 62-26283

Trans. of Elektricheskie Stantsii (USSR) 1956 [v. 27] no. 10, p. 58-59.

DESCRIPTORS: *Electric insulation, Tests.

Wettstein, G. A.
EVERY EIGHTH SWISS HAS A TELEPHONE.
1 Aug 60 [7]p. USASIA: H-6766; JPRS: R-1020-D.
Order from OTS or SLA $1.10 60-31501

Trans. of PTT Technische Mitteilungen (Switzerland) 1959, v. 37, no. 11, p. 503-508.

DESCRIPTORS: *Telephone communication systems, Transmission, *Switzerland.

Mechanical Engineering

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET REFRIGERATION MACHINERY (6). 29 Aug 62 [10]p. JPRS: 15029.
Order from OTS or SLA $1.10 62-32571

Trans. of Myasnaya Industriya SSSR, 1962 [v. 33] no 1, p. 29-30; Kholodil'naya Tekhnika (USSR) 1962 [v 39] no. 1, p 63-64; Novye Tovary (USSR) 1962, no. 1, p. 4-5; no. 12, p. 6; and Ekonomicheskaya Gazeta (USSR) 1961, no. 14, p. 32.

DESCRIPTORS: Industrial research, *Refrigeration systems, *Refrigerator cars, Conferences, Production.

Contents:
New refrigeration vans, by V. A. Sirchenko and G. S. Shustikov
Conference on the Achievement and future Progress in the Production of Domestic Refrigerators, Moscow, 29 Nov-3 Dec 61
Oka and Zil refrigerators, by L. Korenblat
The Saratov models
Changes in refrigerator models.

USSR INDUSTRIAL DEVELOPMENT: SOVIET POWER MACHINERY NO. 3. 17 Sep 62 [20]p. JPRS: 15289.
Order from OTS or SLA $1.60 62-33048

Trans. of ##Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 4, p. 45-54; and from Pravda, Leningrad (USSR) 1962, 13 May; Izvestiya (USSR) 1962, 16 May.
##Another trans. is available from OTS or SLA $3.60 in 62-32201, JPRS-14689, 1 Aug 62 [31]p.

DESCRIPTORS: *Industrial research, *Power supplies, *Steam turbines, *Hydroelectric power systems, Turbine blades, Industrial production, Economics, *Machines, Industrial plants, Construction, *Metallurgy.

Contents:
##Small capacity steam turbines, by M. F. Sichikov
##An adjustable blade hydraulic turbine with a double runner in operation at the Uch-Kurganskaya GES, by S. P. Mikhanovskii
The Neva Machine Building Plant imeni Lenin, by A. Gazar'yan
Difficulties in research, by N. Kovalev.

Belozerov, K. and Gritsai, L.
EXPERIENCIAS DE LA EXPLOTACION DE INSTALACION DE CALDERAS DEL BARCO "SHAJTERSK" (Opyt Ekspluatatsii Parosilovoi Ustanovki Parokhoda "Shakhtersk") (Experiments on the Boiler Plant Operation of the Ship "Shajtersk"). 17p. (foreign text included). CID: 62-36. (text in Spanish).
Order from OTS or ETC $1.30 62-26236

Trans. of Morskoi Flot (USSR) 1956 [v. 16] no. 3, p. 12-14.

DESCRIPTORS: *Boilers, Ships.

Gogolin, A. and Ginzburg, E.
EL EMPLEO DEL FREON-22 EN LAS MAQUINAS REFRIGERADORAS DE ABSORCION (O Primenenii Freona-22 v Absorbtsionnykh Kholodil'nykh Mashinakh) (Utilisation of Freon-22 in Absorption Refrigerating Machines). 9p. CID: 62-93. (text in Spanish).
Order from OTS or ETC $0.95 62-26293

Trans. of Kholodil'naya Tekhnika (USSR) 1960 [v. 37] no. 4, p. 72-73.

DESCRIPTORS: *Refrigerants.

Linden, H. and Hennecke, H.
PRESSURE WELDED AUSTENITIC-FERRITIC COMPOSITE JUNCTION PIECES (MANNESMANN-TYPE JOINTS). [1960] [18]p. 10 refs.
Order from SLA $1.60 62-16844

Trans. of V[ereinigung der] G[rosskesselbesitzer]. Mitteilungen (West Germany) 1958, no. 54, p.165-175. Another trans. is available from BISI £5 15s as BISI-1512 [1960].

DESCRIPTORS: *Boilers, *Joints.

For abstract see Technical Translations 4: 33, 1960.

Ordnance, Missiles, and Satellite Vehicles

CONFIGURATION OF VOSTOK SPACESHIPS. 11 July 62, 5p. AID rept. 62-103; [NASA N62 14024].
Order from OTS or SLA $1.10 62-32100

Review of material taken from selected 1961-62 issues of Sovetskaya Belorossiya (USSR) ; Ekonomicheskaya Gazeta (USSR); Krasnaya Zvedza (USSR).

DESCRIPTORS: *Spaceships, Satellite vehicles, Configuration.

OXYGEN REGENERATION IN SPACE VEHICLES. 31 July 62, 3p. AID rept. 62-113; [NASA N62-14680].
Order from OTS or SLA $1.10 62-32590

Review of selected articles from Pravda (USSR), Missiles and Rockets (US) and American Astronautical Society, Annual Meeting (no. 7).

DESCRIPTORS: *Satellite vehicles, Space flight, *Oxygen, Regeneration, Air conditioning equipment, Air.

TRACKING OF MISSILES AND SPACE VEHICLES: REVIEW OF SOVIET LITERATURE. Monthly rept. no. 16 on AID Work Assignment no. 12. 15 Feb 62 [12]p. 11 refs. AID rept. 62-26; AD-273 537.
Order from OTS or SLA $1.60 62-23706

DESCRIPTORS: *Satellite vehicles, *Guided missiles, Surface to surface, Radar tracking, Radio interferometers, *Tracking, *Plasma physics, *Electromagnetic fields, Wave transmission, Electromagnetic waves, Magnetohydrodynamics, *Ionospheric disturbances, Ions, Ionosphere, Upper atmosphere, *Radio astronomy, Radio waves, Extraterrestrial radio waves, Antenna radiation patterns.

Contents:
Electromagnetic problems
Ion clouds and ionosphere perturbations
Radio astronomy.

TRACKING OF MISSILES AND SPACE VEHICLES: REVIEW OF SOVIET LITERATURE. Quarterly rept. no. 1(17) on AID Work Assignment no. 12. 15 May 62 [23]p. 19 refs. AID rept. 62-66, AD-276 104.
Order from OTS or SLA $2.60 62-25141

DESCRIPTORS: *Guided missiles, Tracking, *Satellite vehicles, *Radio astronomy, *Plasma physics, Wave transmission, Extraterrestrial radio waves, Atmosphere, Ionosphere, Scientific research, *Ionospheric disturbances.

Contents:
Electromagnetic problems
Ion clouds and ionosphere perturbations
Radio astronomy.

Ashkerov, V. P., Zabelok, B. G. and others.
FROM THE HISTORY OF ANTI-AIRCRAFT DEFENSE. 28 May 62 [45]p. FTD-TT-61-300.
Order from OTS or SLA $4.60 62-25725

Unedited rough draft trans. of mono. Voiska Protivovozdushnoi Oborony Strany [Air Defense Forces of the Country] Moscow, 1960, chap. 1 and introd., p. 3-34.

DESCRIPTORS: *Antiaircraft defense systems, *Aerial warfare, *Military organizations, Aircraft, History.

Bodner, V. A. and Saleznev, V. P.
AUTOMATIC CONTROL OF THE MOVEMENT OF A BODY IN INERTIAL SPACE. 3 Nov 61 [23]p. 9 refs. FTD-TT-61-155.
Order from OTS or SLA $2.60 62-13569

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1961, no. 4, p. 197-207.

DESCRIPTORS: *Inertial navigation, Automatic, *Control systems, *Space navigation, Equations of motion, Gravity, Drag

A study is made of a system for the automatic control of the direction of a moving object. The required laws of control are established, the conditions of realizing program control are investigated, and the influence of random disturbances on the dynamics of control is

shown. It is concluded that the law of regulating a static control system should include signals of deviations and of the first derivative of the deviation, in which case the latter signal is the predominant one. In an astatic control system, a signal proportional to the integral of the deviation is added to the indicated signals. To decrease the reaction of a control system to random disturbances one must increase the frequency of the system to the maximum, caused by the slope of the curve and the thrust reserve. In any event, the frequency of the control system should be considerably higher than the frequency of the rotation of a body around a planet.

Davydov, V. D. and Gurovskii, N.
FROM THE WINDOW OF AN INTERPLANETARY STATION [AND] HYPOXIA. 19 June 62 [13]p. (illus. omitted). FTD-TT-62-185.
Order from OTS or SLA $1.60 62-25824

Unedited rough draft trans. of Nauka i Zhizn' (USSR) 1961 [v. 28] no. 9, p. 34-36 and 78-79.

DESCRIPTORS: *Extraterrestial bases, Satellite vehicles, *Space flight, Space medicine, *Anoxia.

Demin, V. G. and Sominskii, M. S.
THE LAUNCHING TOOK PLACE IN FEBRUARY... [AND] SOLAR BATTERIES. 24 Apr 62 [31]p. FTD-TT-62-200.
Order from OTS or SLA $3.60 62-25825

Unedited rough draft trans. of Nauka i Zhizn' (USSR) 1961 [v. 28] no. 4, p. 8-11 and 37-41.

DESCRIPTORS: *Satellite vehicles, Spaceships, Launching, *Satellite vehicle trajectories, *Orbital flight paths, Guided missiles, Solar batteries, Solar energy, *Solar cells.

Sanitation and Safety Engineering

Cherkinskii, S. N.
NEW SOVIET REGULATIONS ON THE PREVENTION OF RESERVOIR WATER CONTAMINATION. 14 Aug 62 [12]p. JPRS: 14838.
Order from OTS or SLA $1.60 62-32442

Trans. of Gigiena i Sanitariya (USSR) 1962 [v. 27] no. 2, p. 7-15.

DESCRIPTORS: *Water supplies, *Contamination, Control.

Dunskii, V. F., Novikov, V. A., and Sidorov, A. I.
PENETRATION OF AEROSOLS AND GASES INTO BLIND SLITS. 7 Sep 62 [11]p. 2 refs, JPRS: 15164.
Order from OTS or SLA $1.60 62-32858

Trans. of #Kolloidnyi Zhurnal (USSR) 1962, v. 24, no. 3, p. 293-296.

DESCRIPTORS: *Aerosols, Gases, Penetration, *Fumigation, Diffusion.

A solution is obtained for the equation of non-steady diffusion as related to the penetration of an aerosol from an enclosed location into a blind horizontal slit with consideration of settling of the particles and also for an analogous equation as related to the diffusion of a gas into a blind slit. The solutions obtained agree satisfactorily with the results of tests in which a study was made of the penetration of aerosols with a mean particle size of approximately one micron and also of a gas (SO_2) in model blind slits. Aerosols with a particle size on the order of one micron practically do not penetrate into blind slits whereas gases diffuse rapidly into a slit. Therefore, for successful treatment of enclosed locations it is necessary that the aerosol contain a volatile toxic component for the fumigation of slits and other blind location. In the tests there was revealed the additional possibility of the formation of solid-phase deposits in slits as conditioned by the crystallization of settled particles and the growth of crystals due to diffusion of the vapor from the installation into the slit. (Author)

Solov'ev P. M.
IMPROVE THE DESIGN OF EMERGENCY RESPIRATOR SP-55M. 20 July 62 [10]p. JPRS: 14547.
Order from OTS or SLA $1.10 62-32060

Trans. of Bezopasnost' Truda v Promyshlennosti (USSR) 1962 [v. 6] no. 1, p. 9-10.

DESCRIPTORS: Design, *Respirators, Hopcalite, Air intake filters.

Tsyrul'nikov, A. S. and Ryzhenko, I. A.
THE EFFECT OF VENTILATION VELOCITY ON CONDITIONS OF DUSTINESS AND GASSINESS DURING THE OPERATION OF COAL-CUTTING MACHINES (Vliyanie Skorosti Vozdushnoi Strui na Pyl'no-gazovyi Rezhim pri Rabote Vemochnykh Mashin) tr. by L. Meyer. June 61 [8]p. 5 refs. S. M. R. E. Trans. no. 4528; NLL M. 3426.
Order from OTS or SLA $1.10 62-24838

Trans. of Ugol' Ukrainy (USSR) 1960, v. 4, no. 3, p. 24-26.
Another trans. is available from OTS or SLA $1.10 as 62-23892, NCB-A1897/SEH, NLL M. 3377 [1962] [7]p.

DESCRIPTORS: *Coal, Mines, Methanes, *Gases, *Particles, Reduction, *Machines, Safety, *Ventilation, Air, Velocity, *Dust explosions, Explosions.

For abstract see Technical Translations 8: 255, 1962.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

USSR INDUSTRIAL DEVELOPMENT: SOVIET FOOD PROCESSING MACHINERY NO. 2. 17 Sep 62 [16]p. (figs. omitted), JPRS: 15290.
Order from OTS or SLA $1.60 62-33050

Trans. of Vinodelie i Vinogradarstvo SSSR, 1962 [v. 22] no. 4, p. 44-50, 52-53; and Molochnaya Promyshlennost' (USSR) 1962 [v. 23] no. 5, p. 3-5.

DESCRIPTORS: *Industrial production, *Machines, *Food, Beverages, *Wines, *Milk.

Contents:
New equipment for wine-making enterprises, by G. A. Zhdanovich
Mechanization of production and exchange of advanced experience, by P. F. Afanas'ev
Advanced technology and methods in production, by L. Burtsev.

Belusova, N.
UTILIZACION DEL SUERO (Ispol'zovanie Syvorotki). (Serum Utilisation). 4p. CID: 62-39. (text in Spanish).
Order from OTS or ETC $0.75 62-26239

Trans. of Molochnaya Promyshlennost' (USSR) 1955, [v. 16] no. 6, p. 12.

DESCRIPTORS: *Serum.

Vyshemirskii, F.
ESTABILIDAD DE LA MANTEQUILLA ELABORADA POR LOS PROCEDIMIENTOS DE FABRICACION CORRIENTE Y EN SERIE (Stoikost'Slivochnogo Masla Potochnogo i Obychnogo Sposobov Proizvodstva) (Stability of Butter Obtained by Ordinary and Chain Manufacturing Processes) 14p. CID: 62-81. (text in Spanish).
Order from OTS or ETC $1.15 62-26281

Trans. of Molochnaya Promyshlennost' (USSR) 1958 [v. 19] no. 8, p. 10-12.

DESCRIPTORS: *Butter, Control, Manufacturing methods.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

THE CONTEMPORARY STATE OF THE ART AND DEVELOPMENT TRENDS IN THE TECHNOLOGY OF MACHINE-BUILDING AND TOOL-MAKING: SELECTED PARTS. 17 Apr 62 [91]p. (24 figs. omitted) 65 refs. FTD-TT-61-335.
Order from OTS or SLA $8.60 62-24930

Unedited rough draft trans. of mono. Sovremennoe Sostoyanie i Napravleniya Razvitiya Tekhnologii Mashinostroeniya i Priborostroeniya, Moscow, 1960, p. 163-196, 232-238, 464-465, 502-505.

DESCRIPTORS: *Machines, Construction, *Tools, Production, Metals, Plasticity, Deformation, Surfaces, Pressure, Processing, Machine tools, *Cutting tools, Friction, *Lubricants, *Film cooling, Control, Automatic *Automation.

Contents:
General information
The physical bases of the processes used in cold surface-working of metals under pressure
Methods of surface treatment under pressure
Technical and economic potentials and efficiency of surface-working under pressure
The use of surface working under pressure in machine building and tool making
Some problems involved in the use of lubricating and cooling liquids in treating metals by cutting
Tasks in the field of automatic control
Development, prospects, and tasks in the field of integrated automation and mechanization of production.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET CONSTRUCTION MACHINERY (17). 30 Aug 62 [34]p. JPRS: 15058.
Order from OTS or SLA $3.60 62-32845

Trans. of excerpts from Mekhanizatsiya Stroitel'stva (USSR) 1962 [v. 19] no. 7, p. 1-3 and 11-14; Stroitel'nye i Dorozhnye Mashiny (USSR) 1962 [v. 7] no. 7, p. 1-8 and 14-16; Ekonomicheskaya Gazeta (USSR) 1962, no. 28(49) p. 36.

DESCRIPTORS: *Construction, Industrial research, *Road building equipment, *Machines, Reliability, Economics, Quality control, *Ditch digging equipment, *Excavators, *Bulldozers, *Hoists, Labor, Production, *Management engineering, Maintenance, *Cargo vehicles, Loading.

Contents:
Improving the quality of construction and road machinery, by N. G. Dombrovskii
Better utilization of construction machinery
Increasing machine reliability and durability is the most important economic problem by N. G. Dombrovskii
The FTK-GPI-38 trench cutting digger, by A. F. Nikolaev and others
The new GPS-70 loading machine, by A. N. Devyatkov
The "UER" rotary excavator, by A. Kovalev.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET METALWORKING EQUIPMENT (27). 24 Aug 62 [20]p. JPRS: 14951.
Order from OTS or SLA $1.60 62-32556

Trans. of Yunyi Tekhnik (USSR) 1962 [v. 7] no. 3, p. 38 and 40-43; and from Sovetskaya Moldaviya (USSR) 1962, 14 Apr; Pravda, Moscow (USSR) 1962, 10 Apr; Vechernaya Moskva (USSR) 1962, 29 Apr.

DESCRIPTORS: *Industrial research, *Metal forming presses, *Machine tools, Standardization, Conveyors, Cutting tools, Industrial equipment, Management engineering, *Scheduling, Machines, Industrial production, Automatic

Contents:
Standardization of machine tool parts
Information on the Moscow Frezer plant
What is taking place in the Krasnyi proleterii plant, by L. Saksonov
Additional production reserves at the Kolomna heavy machine tool building plant by Yu. Azbukin and V. Khublarov
Moscow Stankoliniya plant, where automatic plants are built, by A. Verein and others

SOVIET INDUSTRIAL DEVELOPMENT: SELECTED TRANSLATIONS ON SOVIET PRECISION EQUIPMENT (34). 20 July 62 [19]p. JPRS: 14537.
Order from OTS or SLA $1.60 62-25972

Trans. of Kholdil'naya Tekhnika (USSR) 1962 [v. 38] no. 2, p. 9-13; Avtomatika i Priborostroenie (USSR) 1962 [v. 1, no. 1] p. 3-4; Mekhanizatsiya i Automatizatsiya Proizvodstva (USSR) 1962, v. 16, no. 2, p. 54; no. 4, p. 59; Promyshlennaya Energetika (USSR) 1962 [v. 17] no. 5, p. 49 and 61.

DESCRIPTORS: *Precision equipment, Machines, Industrial research, *Air conditioning equipment, Instrumentation, Control, Air, Humidity, Classification, Automation, Electrical equipment, Resistance, Relays.

Contents:
New instruments for measuring and controlling air humidity in cooled areas, by E. A. Agarev and others
Tasks facing the instrument-making industry of the Ukraine
Development of office machines
Development of standard classification and sizes for electrothermal equipment
Instruments for automation: temperature signalling humidity regulating, pressure regulating, balanced relay devices
Electrical resistance measuring devices.

Afanas'ev, V. D.
AUTOMATIZACION DE NUEVAS LAMINADORAS (Avtomatizatsiya Novykh Prokatnykh Stanov) (Automation of New Rolling Mills). 20p. CID: 62-22. (text in Spanish).
Order from OTS or ETC $1.40 62-26222

Trans. of Vestnik Mashinostroeniya (USSR) 1957 [v. 37] no. 6, p. 3-8.

DESCRIPTORS: *Rolling mills, Automation.

Al'bert, M. A.
DISPOSITIVO SEMIAUTOMATICO PARA CANTEAR PARA MACHO PILON (Kantovatel'-poluavtomat k Shtampovochnomu Molotu) (Semiautomatic Double-edging Device for Plunger Piston). 7p. CID: 62-47. (text in Spanish).
Order from OTS or ETC $0.90 62-26247

Trans. of Vestnik Mashinostroeniya (USSR) 1956 [v. 36] no. 2, p. 45-46.

DESCRIPTORS: Automation, *Chipping hammers.

Antonov, N. M. and Voronitsyn, I. S.
PRODUCCION EN GRAN ESCALA DE PIEZAS CROMADAS (Massovoe Proizvodstvo Khromirovannykh Detalei) (Large Scale Production of Chromium Coated Parts). 19p. 3 refs. CID: 62-41. (text in Spanish).
Order from OTS or ETC $1.35 62-26241

Trans. of #Vestnik Mashinostroeniya (USSR) 1961, [v. 41] no. 5, p. 10-14.

DESCRIPTORS: *Chromium, Coatings.

Basov, A. A.
AUMENTO DE LA DURACION EN SERVICIO DE PORTA-CUCHILLOS DE TORNOS (Udlinenie Sroka Slyzhby Reztsederzhatelei Tokarnykh Stankov) (Increase of Lathe Service Life). 5p. CID: 62-32. (text in Spanish).
Order from OTS or ETC $0.80 62-26232

Trans. of Stanki i Instrument (USSR) 1955 [v. 26] no. 2, p. 32.

DESCRIPTORS: *Lathes, Cutting tools.

Bogdanov, E. A.
SOBRE LA FRICCION DE SEGMENTOS DE EMBOLO (O Trenii Porshnevykh Kolets) (On Piston Ring Friction). 25p. CID: 62-46. (text in Spanish).
Order from OTS or ETC $1.65 62-26246

Trans. of [Avtomobil'naya Promyshlennost'] (USSR) 1957, no. 6, p. 11-15.

DESCRIPTORS: *Piston rings, Friction.

Gabler, P.
THE EFFICIENT USE OF STAMPING DIES. [1962] 5p. (figs. refs. omitted).
Order from SLA $1.10 62-16980

Trans. of Werkstatt und Betrieb (West Germany) 1948, v. 81, no. 7, p. 188-190.

DESCRIPTORS: *Dies, Castings, Machine tools.

Ivanov, A. P. and Lisitsyn, V. D.
MODERNIZATION OF THE STEAM-HYDRAULIC PRESSES, CHAP. III. 28 Feb 62 [31]p. FTD-TT-61-337.
Order from OTS or SLA $3.60 62-23685

Unedited rough draft trans. of mono. Modernizatsiya Kuznechno-Shtampovochnogo Oborudovaniya, Moscow, 1961, p. 56-77.

DESCRIPTORS: *Hydraulic presses, *Steam, Machine tools, Water vapor, *Hydraulic accumulators, *Hydraulic pressure pumps, Electronic drives, Industrial equipment, Production, Power drives.

Engines and Propulsion Systems

NOVEL MATERIAL FOR NOZZLES OF JET JET ENGINES AND PROCESS OF MANUFACTURE, tr. by G. E. 27 Aug 62, 3p.
Order from OTS or SLA $1.10 62-32930

Trans. of French patent 1,249,410, internat. cl. F 02 k, by Société Le Carbone-Lorraine, appl. filed 16 Nov 59, granted 21 Nov 60.

DESCRIPTORS: Jet engines, *Nozzles, Materials, Manufacturing methods, Graphite, Impregnation.

The material comprises a carbonaceous substance in which the pores are filled with highly fusible substances not reacting with the graphite, and having a very high boiling point, although easy to vaporize. It is characterized by the following features taken separately or in combination: the carbonaceous substance is graphite; the impregnating agent could be a metal; and the material could contain at least 32.5% of tin, this percentage being calculated in relation to the total weight of the impregnated material.

Bondarev, G. E.
FUNCIONAMIENTO DEL MOTOR DE DOS TIEMPOS A PRESIONES ELEVADAS (Rabota Dvukhtaknogo Dvigatelya pri Povyshennykh Davleniyakh) (Two Stroke Engine Operation at High Pressures). 14p. CID: 62-6. (text in Spanish).
Order from OTS or ETC $1.15 62-26206

Trans. of Vestnik Mashinostroeniya (USSR) 1957 [v. 37] no. 5, p. 5-8.

DESCRIPTORS: *Internal combustion engines.

Hänicke, Hermann.
INTERNAL COMBUSTION ENGINE WITH PISTON COMPRESSOR FOR PROPELLANT GAS GENERATION, tr. by L. A. N. 3 Aug 62, 6p. (figs. omitted).
Order from OTS or SLA $1.10 62-32917

Trans. of German patent 814,540, cl. 46a4, gr. 7, pat. from 4 Nov 48, grant announced 26 July 51, pub. 24 Jan 52.

DESCRIPTORS: *Internal combustion engines, Pistons, Compressors, Compressed air, *Gas generating systems, Propellant properties

Kossov, M. A. and Kurchman, B. S.
MATERIALS OF THE "HOT" PARTS OF GAS-TURBINE AUTOMOBILE ENGINES. 12 July 62 [16]p. 3 refs. FTD-TT-62-504.
Order from OTS or SLA $1.60 62-32535

Unedited rough draft trans. of Avtomobil'naya Promyshlennost' (USSR) 1961 [v. 27] no. 10, p. 29-33.

DESCRIPTORS: *Automotive industry, *Gas turbines, Gas turbine nozzles, Gas turbine rotors, Gas turbine disks, *Heat resistant alloys, Cobalt alloys, Nickel alloys, Iron alloys.

Machine Parts and Mechanisms

Hanfland, C. H.
SELF-LOCKING NUTS. Sep 62.
Order from BISI £10 BISI-2831

Trans. of Industrieblatt (West Germany) 1961, v. 61, no. 1, p. 1-19.

DESCRIPTORS: *Self-locking nuts, Classification, Mechanical properties, Deformation, Threads, Springs, Pressure

Zhavoronkov, N. M., Safin, R. Sh., and Nikolaev, A. M.
MASS TRANSFER IN ROTARY-TYPE EQUIPMENT. Jan 62, 4p. 6 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Khim[icheskoe] Mashinostroenie (USSR) 1961 [v. 3] no. 5, p. 15ff.

DESCRIPTORS: *Industrial equipment, Design, *Mass transfer, *Heat transfer, Gases, Velocity, Resistance, Equations, *Chemical engineering.

NEW TECHNOLOGICAL PROCESSES AND RECOMMENDATIONS IN THE CONSTRUCTION OF CASTINGS IN THE MANUFACTURE OF PRECISION FOUNDARY PRODUCTS: SELECTED ARTICLES. 21 Mar 62 [27]p. FTD-TT-61-334.
Order from OTS or SLA $2.60 62-24355

Unedited rough draft trans. of mono. Novye Tekhnologicheskie Protsessyi Rekomendatsii po Konstruirovaniyu Form pri Proizvodstve Tochnogo Litya, Moscow, 1959, p. 47-64 and 65-75.

DESCRIPTORS: *Castings, *Precision finishing, Foundries, Production, Alloys, *Bitumens, Coal, Templates, Waxes, Industrial research.

Contents:
Results of the application of a new pattern alloy in the production of precision of castings, by Z. A. Shageev
New materials for "melting out" patterns based upon the bitumen of brown coal (lignite) by R. M. Senina and V. N. Ivanov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET METALWORKING EQUIPMENT NO. 28. 4 Sep 62 [17]p. (photos omitted). JPRS: 15101.
Order from OTS or SLA $1.60 62-32835

Trans. of Ekonomicheskaya Gazeta (USSR) 1962, no. 20(41), p. 7; Standartizatsiya (USSR) 1962 [v. 26] no. 3, p. 40-42; no. 6, p. 54-59.

DESCRIPTORS: *Industrial production, *Machine tools, *Documentation, Standardization, *Forging, *Metal forming presses.

Contents:
Propagandists of the new
The scientific and technical conference on standardization in the enterprises of the Moscow oblast' sovnarkhoz
Standardization as demonstrated at the Exposition of Achievements of the National Economy of USSR, by M. A. Sirotin
New state standards (forging and pressworking equipment) by A. V. Lopatin.

USSR INDUSTRIAL DEVELOPMENT: SOVIET METALWORKING EQUIPMENT NO. 29. 17 Sep 62 (figs. omitted) [27]p. JPRS: 15302.
Order from OTS or SLA $2.60 62-33024

Trans. of Traktory i Sel'Khozmashiny (USSR) 1962 [v. 32] no. 6, p. 37-38; partial trans. of Standartizatsiya (USSR) 1962 [v. 26] no. 6, p. 65-67; Kuznechno-Shtampovochnoe Proizvodstvo (USSR) 1962 [v. 4] no. 6, p. 26, 29, 30; Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 6, p. 24-39; and from Pravda, Moscow (USSR) 1962, 30 Apr.

DESCRIPTORS: *Industrial production, *Machine tools, Industrial plants, Standardization, *Gears, Manufacturing methods, *Drawing (Maching processing) Automation, *Lathes, *Spark machining, *Lenses, *Grinders.

Contents:
Creating a plant of the future, by P. Slivin
Review of various articles on standardization
Gear production by new manufacturing methods, by I. M. Kabel'skii
Hydraulic rotary transfer drawing press, by M. A. Trofimov
Automatic production line AL-27, by A. S. Uzdennikov
Machine tool model VSh-178 for filing balls, by L. B. Rogatnikov
Machine tools produced by the Srednovolzhskii machine tool building plant, by Yu. G. Rubinchik
Semiautomatic electric discharge machine model ERM for machining the working tapered section of atomizers, by B. G. Gutkin
Semiautomatic machines for processing spherical lenses, by Yu. G. Mel'bart
Automatic cylindrical grinder model ZR210, by V. G. Grigor'ev.

Cihlar, Friedrich.
SPRING MOUNTING OF SUPPORT BEAM OF VAULTS OF INDUSTRIAL FURNACES, ESPECIALLY VAULTS OF TILTING FURNACES, tr. by J. B. 20 July 62, 8p. (2 figs. omitted).
Order from OTS or SLA $1.10 62-32219

Trans. of German Auslegeschrift (DAS) 1,061,351, cl. 18b 14/04, internat. cl. C21c, by Oesterreichisch-Amerikanische Magnesit AG, Austria, appl. 12 Jan 59, announced and Auslegeschrift pub. 16 July 59.

DESCRIPTORS: *Open hearth furnaces, Springs, Mounting brackets, Beams, Roofs, Bolts, Design.

The invention proposes to produce a spring mounting of the abutment (support beam) of the vaults of industrial furnaces, especially the vaults of tilting furnaces, which mounting permits the employment of a very elastic spring, yet possesses a stop (block) so that unduly large displacements of the vault or of the roof as a unit in the direction toward the back wall do not occur. The supporting spring is provided with a spring bolt passing through the center of the spring. The spring bolt has an adjustable stop for the spring, suitably a disk and a nut at the end of the spring farthest removed from the support beam, and is crossed by a guide bolt at the end positioned next to the support beam. The guide bolt receives at least two head screws arranged transversely with respect to its axis. The head screws pass through a spring plate and form with their heads a stop for the spring plate.

Gündel, Max.
INVESTIGATIONS ON THE ECONOMIC OPERATION OF D.C. REVERSING ROLLING MILL MOTORS FOR HEAVY ROLLING MILLS. [1960] [47]p. 6 refs.
Order from SLA $4.60 62-16856

Trans. of Metallurgie und Giessereitechnik (Germany) 1955, v. 5, no. 2, p. 50-60.
Another trans. is available from BISI £8 as BISI-1691 [1960].

DESCRIPTORS: *Rolling mills, Control systems, *Electric motors, Direct current, Operation.

Lehfeldt, W.
AUTOMATIC TESTING OF BARS AND TUBES BY ULTRASONICS. Sep 62.
Order from BISI £4 5s BISI-2871

Trans. of Bänder, Bleche, Rohre (West Germany) 1962 [no. 4] p. 181-186.

DESCRIPTORS: Automation, *Test equipment, *Steel tubing, *Electronic equipment, *Ultrasonics.

Lehfeldt, W.
ULTRASONIC TESTING OF DEEP DRAWING SHEETS. [1960] [8]p.
Order from SLA $1.10 62-16884

Trans. of mono. [(paper) presented at a Colloquium on Deep Drawing, held in Paris, 23-25 May 60].
Another trans. is available from BISI £3 10s as BISI-1792 [1960].

DESCRIPTORS: *Sheets, Impurities, Nondestructive testing, *Ultrasonics, Steel industry.

Papuli, G.
MODERN FORGING MANIPULATORS. Paper submitted to the National Congress of the Italian Metallurgical Association (no. 8) Turin, 21-24 Sep 58. [1960] [16]p.
Order from SLA $1.60 62-16860

Trans. of la Metallurgia Italiana, 1959, v. 51, no. 3, p. 94-100.
Another trans. is available from BISI £5 as BISI-1619 [1960].

DESCRIPTORS: *Steel industry, Industrial equipment, *Forge presses, Design.

Schlüter, Herman and Stäblien, Fritz.
COLD-ROLLED DYNAMO STRIPS. [1960] 14p.
Order from SLA $1.60 62-16864

Trans. of ETZ [Elektrotechnische Zeitschrift. Ausgabe] A. [Zentralblatt für Elektrotechnik] (West Germany) 1959, v. 80, no. 17, p. 576-582.
Another trans. is available from BISI £4 10s as BISI-1740 [1960].

DESCRIPTORS: *Sheets, Production, Annealing, Mechanical properties.

The production of the strips from the preliminary slab via the hot strip to the finished cold-rolled strip has been described briefly, including the usual annealing method. The differences in the mechanical, technological and magnetic characteristics between hot-rolled and cold-rolled strip have been thoroughly discussed. Diagrams and a table show the dynamo-strip types which are at present manufactured and also describe a few general connections between silicon content and mechanical properties and also between sheet thickness and magnetic reversal losses. (Author)

Sosenko, A. B.
ELECTROSPARK MACHINING OF GAS TURBINE ROTORS. 7 Sep 62, 4p. AID Rept. 62-130.
Order from OTS or SLA $1.10 62-33226

Abstract trans. of Stanki i Instrument (USSR) 1962 [v. 33] no. 6, p. 16-20.

DESCRIPTORS: *Gas turbine rotors, *Spark machining, Impellers, Machining.

Transport, Traction and Hoist Facilities

USSR INDUSTRIAL DEVELOPMENT: SOVIET AUTOMOTIVE INDUSTRY NO. 19. 17 Sep 62 [70]p. 6 refs. JPRS: 15292.
Order from OTS or SLA $6.60 62-33023

Trans. of Avtomobil'naya Promyshlennost' (USSR) 1962 [v. 28] no. 1, p. 1-3; no. 2, p. 6-8; Za Rulem (USSR) 1961 [v. 19] no. 9, p. 4-5; 1962 [v. 20] no. 1, p. 4; and 14 selected articles from 7 Russian newspapers.

DESCRIPTORS: *Industrial research, *Automotive industry, Vehicles, Passenger vehicles, *Transportation, Industrial equipment, *Cargo vehicles, *Automation, *Machine tools, Conveyors, Communism, Scheduling, Management engineering, Korea, Maintenance, Industrial production, *Ball bearings, Machines, *Snow removal, Internal combustion engines, *Bearings, Roller bearings, Quality control, *Motorcycles, Economics, Labor.

Contents:
Problems of the automotive industry for 1962 and the development of new automotive technology, by A. A. Anders
Planned type-size lightweight motor vehicles, by Yu. A. Dolmatovskii
Faster mastery of new equipment

The country receives its first delivery of the new trucks from Minsk, by N. Vasil'ev
Automation in place of manual labor, by F. Zheltogirko
The mechanical helpers, by A. Vinokurov
The factory works for Communism, by N. Vasil'ev
Our scientific wealth; council for the safeguarding of Socialist property at the Minsk automotive plant, by N. Fontalin
Comradeship of Soviet and Korean automotive builders
At the Volodarsk auto-repair shops, by L. Galinskii
Yaroslavl' motor plant to double production, by P. Kharchenko
Troubles at Saratov bearing plant
Production of bicycles, by M. Burenkov
A sweeping machine
Motor jitneys
A bearing loses its strength, by V. Kropotkin (excerpt)
Minsk motor and bicycle plant (excerpt)
The best cut of semitrailers, by V. Khashutogov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET AUTOMOTIVE INDUSTRY NO. 20. 18 Sep 62 [16]p. JPRS: 15327.
Order from OTS or SLA $1.60 62-33051

Trans. of Za Rulem (USSR) 1961 [v. 19] no. 2, p. 20; no. 3, p. 17-20; no. 12, p. 8.

DESCRIPTORS: *Automotive industry, *Motorcycles, Design, Vehicles, Passenger vehicles, Production.

Contents:
The new Minsk M-103 motorcycle, by G. Radion
The K-750 sidecar motorcycle, by D. Butenko
From the IZh-56 to the Izh-planeta, by S. Fisher
The readers propose new designs, by V. Romanets
Motorroller-motorcycle, by A. Yasakov.

Balagurov, V. A.
CALCULO TERMICO DE LAS BOBINAS DE IGNICION EN AUTOMOVILES (Teplovoi Raschet Avtomobil'nykh Katushek Zazhiganiya) (Thermal Estimation of Automobile Ignition Coils). 17p. 4 refs. CID: 62-27. (text in Spanish).
Order from OTS or ETC $1.30 62-26227

Trans. of [Avtomobil'naya Promyshlennost'] (USSR) 1955, no. 12, p. 13-16

DESCRIPTORS: *Ignition coils, Passenger vehicles

Bazanov, A. F.
ELEMENTOS INTERCAMBIABLES ACTIVOS PARA APARATOS CARGADORES DE HORQUILLA (Smennoe Rabochee Oborudovanie k Vilochnym Pogruzchikam) (Interchangeable Active Elements for Fork Elevators). 10p. CID: 62-26. (text in Spanish).
Order from OTS or ETC $1. - 62-26226

Trans. of [Mekhanizatsiya i Avtomatizatsiya Proizvodstva] (USSR) 1955 [v. 9] no. 9, p. 40-41.

DESCRIPTORS: *Fork lift vehicles.

Borisov, N. L.
EXPERIENCIAS OBTENIDAS EN LA EXPLOTACION DE LAS GRUAS DE TORRE BK-2 (Iz Opyta Ekspluatatsii Bashennykh Kranov bk-2) (Experience Acquired in BK-2 Crane Operation). 8p. CID: 62-9. (text in Spanish).
Order from OTS or ETC $0.90 62-26209

Trans. of Mekhanizatsiya Stroitel'stva (USSR) 1955, [v. 12] no. 5, p. 24-25.

DESCRIPTORS: *Hoists, Operation

Caire, Daniel.
THE NEW 1400 H.P. DIESEL-ELECTRIC LOCOMOTIVES OF THE TYPE 040 DG CONSTRUCTED FOR THE FRENCH NATIONAL RAILWAYS (S.N.C.F.). [1960] [6]p.
Order from SLA $1.10 62-16853

Trans. of [Association Française des Amis des] Chemins de Fer. [Revue] 1959, Nov/Dec, p. 164-166. Another trans. is available from BISI £2 5s as BISI-1653 [1960].

DESCRIPTORS: *Diesel engines, Design, *Locomotives, France, Railroads, Railroad cars, Construction.

Dogin, M. E. and Lebedev, V. P.
DEPENDENCE OF THE RESISTANCE IN PNEUMATIC-CONVEYING PIPELINES ON THE FUNDAMENTAL PARAMETERS OF TWO-PHASE FLOW. Jan 62, 4p. 4 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 8, p. 93ff.

DESCRIPTORS: *Pneumatic systems, *Conveyors, Resistance, *Phase studies, Fluid flow, Gas flow, Particles, *Chemical engineering.

Porcher, Bernard.
THE WHY'S AND WHEREFORE'S OF TRACK MAINTENANCE PROBLEMS. [1960] [21]p.
Order from SLA $2.60 62-16852

Trans. of Association Française des Amis des Chemins de Fer. Revue, 1959, Nov/Dec, p. 176-186. Another trans. is available from BISI £7 10s as BISI-1654 [1960].

DESCRIPTORS: *Railroads, France, *Railroad tracks, Maintenance.

Rudyakov, Z. Z.
ROLLING OF CYLINDRICAL BODIES TAKING INTO ACCOUNT FRICTIONAL FORCES OF ADHESION, tr. by B. W. Kuvshinoff. 23 Aug 62, 15p. 4 refs. APL/JHU TG 230-T324.
Order from OTS $0.50 62-11773

Trans. of Institut Inzhenerov Zheleznodorozhnogo Transporta, Dnepropetrovsk. Trudy (USSR) 1958, v. 26, p. 322-335.

DESCRIPTORS: *Cylindrical bodies, *Roll, Friction, *Adhesion, Railroad cars, Railroad tracks, Vehicle wheels

Stein, von.
INNOVATIONS IN THE SIGNAL CONTROL OF CITY TRAFFIC. [1962] 40p.
Order from K-H $50.00 K-H 86255

[Partial trans. of unidentified mono., n. p., n. d.].

DESCRIPTORS: *Traffic, Control, *Signals, Urban areas.

Woltersdorf, Friedrich Wilhelm.
RAILROAD SAFETY DEVICE FOR DETECTING THE PRESENCE OF OVERHEATED AXLE BOXES, tr. by G. E. 28 Feb 62, 7p. (4 figs. omitted).
Order from OTS or SLA $1.10 62-23314

Trans. of German Auslegeschrift (DAS) 1,082,618, cl. 20h 1, internat. cl. B 61 k, by Siemens and Halske Aktiengesellschaft, appl. 17 Dec 58, appl. announced and Auslegeschrift pub. 2 June 60.

DESCRIPTORS: *Axle shafts, *Bearings, Heating, Detection, Railroad cars, Safety.

The device is characterized by a stationary photoelectric arrangement comprising at least one light source for beamed light and at least one light-sensitive element, for example, a photoelectric cell arranged so that the light rays emanating directly from light source and/or the light rays from light source reflected by the axle box impinge upon photosensitive element only in the case of a specific shape typical of the axle box and thus generate electric control signals applied to the overheated axle box measuring devices.

MATERIALS

PROCEDURE FOR THE PREPARATION OF PHOTOSENSITIVE COLLOIDAL LAYERS. [1956] 1p. 1 ref.
Order from OTS or SLA $1.10 62-16386

Trans. of French patent 747,246, gr. 17, cl. 3, by Kalle & Co. (Germany) appl. 9 Dec 32, issued 28 Mar 33, pub. 13 June 33 (pat. appl. filed Germany 9 Dec 31, declaration of applicant).

DESCRIPTORS: *Photographic emulsions, *Azo compounds, Gelatin, Photosensitivity, Photographic films, Colloids, Preparation.

Bardichev, A. A.
PRACTICA DEL VERTIDO DEL HORMIGON EN LOS BLOQUES POR MEDIO DE BALDES Y CONTAINERS (Iz Opyta Podachi Betona v Bloki Bad'yami i Konteinerami) (Practical Aspects of Concrete Pouring in Blocks with Pails and Containers). 11p. CID: 62-30. (text in Spanish).
Order from OTS or ETC $1.05 62-26230

Trans. of Gidrotekhnicheskoe Stroitel'stvo (USSR) 1953 [v. 22] no. 7, p. 14-16.

DESCRIPTORS: *Concrete, Molding.

Belotelov, N. P.
CEMENTO PLASTIFICADO DE LA FACTORIA "KOMMUNAR" (Plastifisirovannyi Tsement Zavoda "Kommunar") (Plastified Cement Produced in the "Kommunar" Plant). 4p. CID: 62-38. (text in Spanish)
Order from OTS or ETC $0.75 62-26238

Trans. of Tsement (USSR) 1954 [v. 20] no. 7, p. 28.

DESCRIPTORS: *Cements, Plasticity.

Burshtein, M. A.
RESULTADOS DE LOS TRABAJOS EXPERIMENTALES DEL VUGI EN EL CAMPO DE CREACION DE NUEVOS TIPOS DE ENTIBADO DE HORMIGON ARMADO (Rezultaty Eksperimental'nykh Rabot VUGI v Oblasti Sozdaniya Novykh Vidov Zhelezobetonnoi Krepi) (Results of Experimental Work Carried out by VUGI in the Development of New Types of Reinforced Concrete Props). 16p. (foreign text Included). CID: 62-53. (text in Spanish).
Order from OTS or ETC $1.25 62-26253

Trans. of Ugol' (USSR) 1956 [v. 31] no. 2, p. 15-18.

DESCRIPTORS: *Reinforced concrete.

Frielingsdorf, H., Becker, K., and Heiss, R.
EXPLANATION OF THE DECLINE OF STRENGTH IN HEAT-SEALED PLASTIC FILMS. Excerpt from dissertation: Investigations of the Mechanical Strength of Heat Sealed Plastic Films in Packing Technology, (H. Frielingsdorf) Techn[ische] Hochschule, Munich. 25 Sep 60 [23]p. 8 refs.
Order from SLA $2.60 61-16725

Trans. of Kunststoffe (West Germany) 1960, v. 50 [no. 3] p. 148-154.

DESCRIPTORS: *Plastic films, Mechanical properties, Ethylenes, Polymers, *Seals, Containers, *Sealing compounds.

Because the union of heat-sealed thermoplastic films displays a strength of about 40 to 60% of that of the not heated film on an average, studies were undertaken on hard PVC and polyethylene film in order to clarify the cause of this weakening. A laboratory sealing apparatus, operating according to the heat contact method, was developed that permits exact determination of the sealing temperature, pressure and time. As measurement magnitude for the seam strength we used the splitting resistance for PVC films. The conjecture that the film is weakened near the seam on account of the strong curvature taking place in the splitting process itself could not be confirmed by the mechanical imitation of a seam with aid of a clamp. The investigations rather showed that a strong embrittlement of the material occurred owing to the heating in the sealing process. The weakest place of a heat-sealed union of two plastic films is thus that which was simultaneously the warmest and thinnest. It is found directly next to the seam, where the films have experienced a change by heat conduction, however no mutual fusion.

Miller, L. F. and Blake, C. B.
MAGNETIC PRINTING INKS FOR ELECTRONIC SORTING AND COUNTING PROCESSES. [1962] 5p. 1 ref.
Order from SLA $1.10 62-14074

Trans. of die Druckfarbe (Germany) [sic] 1959, no. 2, p. 249-250 and 252.

DESCRIPTORS: *Printing, *Inks, Magnetic properties, *Electronic systems, Counting methods.

Veits, R. I.
SOBRE EL EMPLEO DE UNA SOLUCION DE CLORURO DE CALCIO AL 2% EN EL HORMIGON ARMADO CON ALAMBRE (O Primenenii 2%-nogo Rastvora Khloristogo Kal'tsiya v Strunobetone) (Utilisation of a 2% Calcium Chloride Solution in Wire Reinforced Concrete). 9p. CID: 62-74. (text in Spanish).
Order from OTS or ETC $0.95 62-26274

Trans. of [Promyshlennoe Stroitel'stvo] (USSR) 1954 [v. 32] no. 9, p. 23-25.
Another trans. is available in English from SLA as RT-2793.

DESCRIPTORS: Calcium compounds, Chlorides, *Reinforced concrete

Wood, Paul Robert.
MATERIAL FOR WATERPROOFING, CAULKING ROAD CONSTRUCTION AND SURFACING AND ALSO CEMENTING, BASED ON BITUMINOUS MATERIAL WITH THE ADDITION OF PLASTICS. [1962] 8p. 7 refs.
Order from OTS or SLA $1.10 62-14809

Trans. of German patent 1,085,806 (U5271 IVc/ 80b) by United States Rubber Co., New York, appl. 14 Apr 58, pub. and granted 21 July 60 (Priority: U. S. 10 June 57).

DESCRIPTORS: *Bituminous coatings, *Plastics, Weatherproofing, Roads, Construction, Pavements, Adhesives.

The material consists of a mixture of a bituminous material preferably tar, and a liquid polyurethane prepolymeride (polyester- or -ether-polyisocyanate combination) in ratios of about 1:1 to 1:19 with the addition of a hardening agent were indicated.

Ceramics and Refractories

Afanas'ev, A. N., Pototskaya, G. V., and Shatokhin, I.
EMPLEO DE MOLDES DE GRAFITO EN LA PRODUCCION DE ARTICULOS MEDIANTE EL METODO DE SOPLADO (Primenenie Grafitovykh Form v Proizvodstve Izdelii Sposobom Vyduvaniya) (Utilisation of Graphite Casts in the Manufacture of Goods by the Blast Method). 6p. CID: 62-23. (text in Spanish).
Order from OTS or ETC $0.85 62-26223

Trans. of #Steklo i Keramika, (USSR) 1956 [v. 13] no. 5, p. 28-29.

DESCRIPTORS: *Graphite, Molding.

Avgustinik, A. I.
CERMETS (Kermety). July 61 [34]p. 79 refs. RTS 1786.
Order from OTS or SLA $3.60 61-27043

Trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1960, v. 5, no. 2, p. 156-168.
Another trans. is available from OTS or SLA $6.60 as 61-11568, JPRS-7201, 29 Nov 60, 62p.

DESCRIPTORS: *Cermets, *Powder metallurgy, Oxides, Carbides, Borides, Nitrides, Silicides, Preparation, *Ceramic materials.

For abstract see Technical Translations 5: 370, 1961.

Borisov, K. I.
REFRIGERACION DE LOS HORNOS PARA VIDRIO (Okhlazhdenie Steklovarennykh Pechei) (Glass Furnace Cooling). 17p. CID: 62-8. (text in Spanish).
Order from OTS or ETC $1.30 62-26208

Trans. of Steklo i Keramika (USSR) 1955, [v. 12] no. 3, p. 18-23.

DESCRIPTORS: *Ovens, *Glass, Cooling.

Büssing, Dieter.
A METHOD OF MEASURING THE HEAT CONDUCTIVITY OF TRANSPARENT SUBSTANCES. 31 July 60, 5p. (5 figs. omitted) 3 refs.
Order from SLA $1.10 62-14218

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1960, v. 33, no. 4, p. 124-126.

DESCRIPTORS: *Glass, Heat transfer, Thermal stresses, Mathematical analysis, *Optical equipment.

Düsing, Werner.
A NEW CHROMIUM-FREE, PLATEABLE Fe-Ni ALLOY AS A SEALING ALLOY FOR LEAD GLASS. 9 Sep 60, 6p. (10 figs. omitted) 3 refs.
Order from SLA $1.10 62-14219

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1960, v. 33, no. 7, p. 257-261.

DESCRIPTORS: *Glass, *Iron alloys, *Nickel alloys, Plating, Seals, *Electron tubes.

Sealing alloys, free from chromium, capable of being faultlessly electroplated are used for the glass-metal envelopes of microwave tubes of soft glass. The new Fe-Ni-Mn alloy (47/48/5) satisfies these requirements and its expansion coefficient is closer to that of the commonly used lead glass than the chromium-free Fe-Ni alloys used hitherto. (Author)

Mann, W.
INFLUENCE OF ORGANIC COMPOUNDS IN CERAMIC MIXES: A TECHNOLOGICAL STUDY OF THE FABRICATION OF POROUS MATERIALS. [1960] [19]p.
Order from SLA $1.60 62-16876

Trans. of Deutsche Keramische Gesellschaft. Berichte (West Germany) 1960, v. 37, no. 1, p. 11-22. Another trans. is available from BISI £5 as BISI-1735 [1960].

DESCRIPTORS: *Porous materials, Production, *Ceramic materials, Physical properties, *Organic compounds.

After a short discussion of the applied technology, the different processes and also the materials used for producing porosity, are investigated. It is found that the classical burning-out process and the modern foam processes are the most practicable. Using petroleum coke, a reliable burning-out material, a series of experiments is carried out to determine certain mechanical properties such as porosity, density and breaking strength. Next a series of new organic compounds including heavy alcohols, heavy alcohol sulphonates, alkylsulphonates, alkylarylsulphonates, ethoxylated heavy alcohols, fatty acid alkyl amides, sorbitan products, fat-albumen condensates and gall products are added to the ceramic mix. After the addition of the organic compound (worked out on the basis of the dry material) the batch was whipped until foamy, then slip cast, and after drying fired at Seger Cone No. 11 temperature. It is found that the addition of the correct amount of water is critical, as some of the additives thicken and others thin out the slip. Here are also the above mechanical properties determined. (Author)

Samsonov, G. V. and Umanskii, Ya. S.
HARD COMPOUNDS OF REFRACTORY METALS. June 62, 352p. 619 refs. NASA TT F-102; N62-13330.
Order from OTS $5.00 62-11711

Trans. of mono. Tverdye Soedineniya Tugoplavkikh Metallov, Moscow, 1957.

DESCRIPTORS: *Refractory materials, *Metals, Alloys, *Transition elements, Hydrides, Carbides, Nitrides, Borides, Silicides, Chemical properties, Physical properties, Microstructure, Crystal structure, *Solid state physics, *Phase studies.

The book describes the properties, methods of production, and areas of use of the hydrides, carbides, nitrides, borides, and silicides of the refractory transition metals of groups IV, VI, VII, and VIII of D. I. Mendeleev's periodic system (titanium, zirconium, vanadium, niobium, tantalum, molybdenum, tungsten, iron, etc.), as well as their alloys, which have great significance both in the metallurgy of special alloys, and in the technology of producing hard alloys. The book is designed for engineering-technical workers and workers of the scientific research institutes of the metallurgy industry. (Soviet publisher's note)

Trier, Wolfgang.
TEMPERATURE DISTRIBUTION AND HEAT FLOW IN GLASS IN THE GATHERING MOLD OF HOLLOW GLASS MACHINES. 28 Feb 61, 12p. (12 figs. omitted) 9 refs.
Order from SLA $1.60 62-14222

Trans. of Glastechnische Berichte (West Germany) 1960, v. 33, no. 12, p. 449-456.

DESCRIPTORS: *Glass, Cooling, Heat transfer, Viscosity, Molding, Machines.

By means of a novel puncture method the cooling of a 45 mm thick glass cylinder at about 1100°C in a modified gathering mold has been studied under conditions comparable to those existing in the machine.

The viscosity distribution was measured in green glass and white glass and the temperature distribution and heat flow calculated from the results. Differences between the two glasses are appreciable in the interior but not in the outside layers. The heat transfer conditions between glass and mold are discussed. The measurements are interpreted to mean that an air film is produced between glass and mold and hinders the flow of heat to the mold. (Author)

Fuels, Lubricants, and Hydraulic Fluids

Erkin, L. I.
REPORT ON STANDARDISATION OF METHODS OF TESTING COKE QUALITY [Soobshchenie po Standartizatsii Metodov Ispytaniya Kachestva Koksa]. [1960] [6]p.
Order from OTS or SLA $1.10 62-16880

Trans. of Koks i Khimiya (USSR) 1958, no. 8, p. 58-60. Other translations are available from BISI £3 10s as BISI-1599 [1960] and from OTS or SLA $1.10 as 61-13164, CRL/T-317, Apr 60 [6]p.

DESCRIPTORS: *Coke, Test methods, Mechanical properties, Physical properties, Standardization.

For abstract see Technical Translations 6: 38, 1961.

Gombosuren, Ya.
MONGOLIAN COAL RESOURCES. 20 June 62 [8]p. JPRS: 14198.
Order from OTS or SLA $1.10 62-25486

Trans. of Shinjleh Uhaan [sic] (Mongolia) 1961, no. 6, p. 19-21.

DESCRIPTORS: *Coal, Mining engineering, Economics, *Mongolia.

Kukharenko, T. A. and Jekaterinina, L. N.
DIE HUMINSÄUREN DER VERWITTERTEN STEINKOHLEN (Humic Acids of the Weathered Bituminous Coals). 21p. (text in German).
Order from T.I.B. $1.87

Trans. of Akademiya Nauk SSSR. Institut Goryuchikh Iskopaemykh, Trudy. 1960, v. 14, p. 58-72.

DESCRIPTORS: *Acids, *Coal.

Shidlovskii, A. A., Semishin, V. I., and Shmagin, L. F.
THERMAL DECOMPOSITION AND COMBUSTION OF HYDRAZINE PERCHLORATE. 27 June 62, 2p. AID rept. 62-90; [NASA N62-14300].
Order from OTS or SLA $1.10 62-32113

Abstract trans. of #Zhurnal Prikladnoi Khimii (USSR) 1962, v. 35, no. 4, p. 756-759.

DESCRIPTORS: *Propellants, *Hydrazines, Perchlorates, Pyrolysis, Combustion, Catalysis, Stability.

Tejnicky, Bohumir
INVESTIGATION OF CZECHOSLOVAK COALS FROM THE VIEWPOINT OF THEIR COKING QUALITIES. 1 Dec 58 [36]p. 9 refs. JPRS(DC)-L-564.
Order from OTS or SLA $3.60 59-11139

Trans. of Ustav pro Vyzkum a Vyuziti Paliv. #Prace (Czechoslovakia) 1957, v. 8, nos. 17-26, p. 110-131.

DESCRIPTORS: *Coal, *Coke, Production, Chemical analysis, Physical properties, Czechoslovakia.

In order to extend the possibilities of obtaining suitable raw material for coke ovens and with a view to making the production of coke more economical by using larger amounts of less suitable coal, 40 seams of various pits were investigated as to their suitability for coking purposes. In addition, 15 full-scale experiments were carried out with the aim of reducing the proportion of high-quality coking coals and increasing that of less suitable coals, as well as of adapting some coking plants hitherto producing low-quality coke to the permanent production of metallurgical coke. In the course of these investigations the laboratory methods for the determination of the coking qualities of coal used by the UVVP have been retested and shown to be perfectly suitable also for the prediction of the coke quality from the coal tested. (Author)

Vinogradov, G. V., Kusakov, M. M. and Zaslavski, Yu. S.
ESTUDIO DE LA REACCION DE LOS ACEITES LUBRICANTES CON LOS METALES (Issledovanie Vzaimodeistviya Smazochnykh Masel s Metallami) (Study of Lubricating Oil-metal Reactions). 15p. CID: 62-68. (text in Spanish).
Order from OTS or ETC $1.20 62-26268

Trans. of Akademiya Nauk SSSR. Vestnik, 1955, [v. 25] no. 9, p. 35-40.

DESCRIPTORS: Metals, *Lubricants, Chemical reactions.

Leather and Textiles

Arkhangelskaya, M. O.
UN METODO UNIFICADO DE ENSAYO DE LOS HILOS Y FIBRAS (Edinye Metody Ispytaniya Nitei i Pryazhi) (Unified Testing Method for Yarns and Fibers). 16p. CID: 62-18. (text in Spanish).
Order from OTS or ETC $1.25 62-26218

Trans. of Tekstil'naya Promyshiennost' (USSR) 1954, [v. 14] no. 1, p. 51-53.

DESCRIPTORS: *Fibers, *Threads, Test methods.

Kitaigorodskii, A. I., Tsvankin, D. Ya., and Petrov, Yu. M.
LONG PERIODS IN ENANT FIBERS. [1962] 2p.
Order from ATS $2.50 ATS-16P59R

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 9, p. 1428.

DESCRIPTORS: *Synthetic fibers, *Amines, *Enanthic acid, Polymers, Preparation, Condensation reactions.

Zazulina, Z. A., Martsinkovskaya, R. N., and Rogovin, Z. A.
THE SYNTHETIC FIBER FLUORLON [Sinteticheskoe Volokno Ftorlon]. [1962] 3p. (2 tables 1 fig. omitted).
Order from OTS or SLA $1.10 62-16743

Trans. of Tekstil'[naya] Prom[yshlennost'] (USSR) 1957, v. 17, no. 5, p. 6-7.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 59-18719, RABRM Trans-648, June 58 [5]p.

DESCRIPTORS: *Synthetic fibers, Polymers, Molecular weight, Production.

For abstract see Technical Translations 3: 309, 1960.

Zhurkov, S. N. and Abasov, S. A.
ROLE OF CHEMICAL AND INTERMOLECULAR BONDS IN POLYMER RUPTURE. Report presented to Conference on Strength of Polymers and Polymer Materials, Moscow, 16-18 May 60. [1962] 11p. (5 figs 2 tables omitted) 1 ref.
Order from OTS or SLA $1.60 62-16702

Trans. of Vysokomolek[ulyarnye] Soedin[eniya] (USSR) 1961, v. 3 [no. 3] p. 450-455.

DESCRIPTORS: *Polymers, *Synthetic fibers, Cellulose, Acrylonitriles, Tensil properties, Rupture, *Plasticizers, Chemical bonds, Molecular association, Mathematical analysis.

Comparisons were made of the temperature-time dependence of the strength of non-orientated, orientated and plasticized viscose, capron and polyacrylonitrile fibers. It has been shown that in all instances there is confirmed the general rule of the temperature-time dependence of strength: $\tau = \tau_0 e^{(u_0 - \gamma\sigma)/kT}$ There were determined the constants τ_0, u_0 and γ, which determine the strength properties of fibers. It was discovered that changes in strength on orientation and plasticization are connected with changes in the structural-sensitive coefficient γ. The activation energy of the rupture process u_0 does not depend on intermolecular bonds and remains unchanged for oriented as well as non-oriented, for plasticized as well as for non-plasticized fibers. The conclusion was reached that the strength of polymers is conditioned by the rupture of the chemical bonds. The intermolecular interaction effects strength indirectly, through coefficient γ. (Author) (See also 62-16701)

Zhurkov, S. N. and Abasov, S. A.
TIME-TEMPERATURE DEPENDENCE OF STRENGTH OF POLYMER FIBERS. [1962] 13p. (10 figs 2 tables omitted) 14 refs.
Order from OTS or SLA $1.60 62-16701

Trans. of Vysokomolek[ulyarnye] Soedineniya (USSR) 1961, v. 3 [no. 3] p. 441-449.

DESCRIPTORS: *Polymers, *Synthetic fibers, Cellulose, Propenes, Nitriles, Vinyl chlorides, Tensil properties, Stresses, Chemical bonds, Mathematical analysis, Time, Temperature.

Measurements were made of the rupture strength of viscose, capron, polypropylene, nitrile and chlorovinyl fibers at various static loads and at temperature intervals of from +150° to -120°C. There was observed a well-defined connection between the magnitude of the rupture stresses σ, absolute temperature T and the longevity of the fiber under load τ, namely $\tau = \tau_0 e^{(u_0 - \gamma\sigma)/kT}$. For various polymeric fibers there were computed the constants τ_0, u_0 and γ, determining the strength properties of fibers. It was found that the preexponential multiplier τ_0 for all the investigated fibers has (according to order of value) the same magnitude 10^{-12} to 10^{-13} sec. The coefficient u_0, determining the activation energy of the rupture process of fiber polymers, corresponds to the energy of the chemical bond. The multiplier γ, having volume dimensions, appeared to be very sensitive to the structural changes of fiber. Propositions were presented as to the activation mechanism of polymer rupture, which is considered as a temporal process, developing in the polymer under the action of temperature and mechanical stresses. (Author)

Paints and Finishes

Gavrilyuk, A. M. and Koval'skii, N. N.
TECNICA DE PINTURA DE LA MAQUINA DURANTE SU PRODUCCION EN CADENA (Tekhnologiya Okraski Stankov pri Potochnom Proizvodstve) (Painting Technique During Chain Production Operations). 15p. CID: 62-82. (text in Spanish).
Order from OTS or ETC $1.20 62-26282

Trans. of Stanki i Instrument (USSR) 1955 [v. 26] no. 6, p. 1-4.

DESCRIPTORS: *Paint sprayers.

Litovchenko, V. G.
UNTERSUCHUNG SCHNELLER OBERFLACHEN-ZUSTANDE VON SILIZIUM (Testing of Rapid Finishes of Silicon). (text in German).
Order from T.I.B. $1.55

Trans. of mono. Fizika Tverdogo Tela: Sbornik Statei, v. 2 [Moscow] 1959, p. 83-87.

DESCRIPTORS: Test methods, *Finishes, *Silicon.

Plastics

Coen, A. and Conti, W.
PHYSICAL AND CHEMICAL PROPERTIES OF POLYPROPYLENE MONOFILAMENTS. [1962] [18]p.
Order from SLA $1.60 62-14277

Trans. of Materie Plastiche (Italy) 1960, v. 26, no. 8, p. 723-730.
Another trans. is available from ATS $10.80 as ATS-74N52I [1961] 10p.

DESCRIPTORS: *Polymers, *Plastics, *Propenes, *Filaments, Physical properties, Chemical properties.

This paper aims at illustrating the general characteristics of isotactic polypropylene monofilaments, especially their principal mechanical, thermal, electric and chemical properties. (Author)

Müller-Tamm, Heinz, Buchholz, Karl, and Stastny, Fritz.
METHOD FOR A FIRE-RESISTANT COATING OF GRANULAR, EXPANDABLE MASSES. [1962] 10p.
Order from OTS or SLA $1.10 62-16259

Trans. of German patent 1,090,851, B 49088 IVb/39b, cl. 39b 22/01, internat. cl. C 08 k, by Badische Anilin- und Soda-Fabrik Aktiengesellschaft, appl. 29 May 58, appl. announced and issued 13 Oct 60.

DESCRIPTORS: *Fire-resistant coatings, Foams, Production, *Thermosetting resins, Halogen compounds, Finishes, Organic compounds, Viscosity, Powders, Bromine, *Plastics, *Heat-resistant polymers.

A method is claimed for the application of a fire-retarding finish on granular expandable masses consisting of easily flammable, thermoplastic synthetics. The method is characterized by the fact that granular expandable masses of easily flammable thermoplastic synthetics are first coated with a thin layer of a viscous organic mass and then by a layer consisting of a powdered material, where at least one of the substances used for the coating contains or consists of a fire-retarding organic bromine compound.

Ratner, S. B., Stinskas, A. V., and Shpakovskaya, E. I.
LONG-TIME STRENGTH OF PLASTICS. Jan 62, 7p. 24 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Plasticheskie Massy (USSR) 1961, no. 7, p. 59-65.
Another trans. is available from ATS $16.85 as ATS-24N55R [1961] 11p.

DESCRIPTORS: *Plastics, Physical properties, Tensile properties, Fatigue (Mechanics), *Chemical engineering.

Ruppert, Heinrich, Schnell, Hermann, and Görden, Leonhard.
METHOD FOR THE PREPARATION OF SELF-EXTINGUISHING PLASTICS. [1962] 6p.
Order from OTS or SLA $1.10 62-16238

Trans. of German patent 1,074,262, F 266695 IVb/39b, cl. 39b 22/10, internat. cl. C 08g, by Farbenfabriken Bayer Aktiengesellschaft, appl. 30 Sep 58, appl. pub. and issued 28 Jan 60.

DESCRIPTORS: *Plastics, *Heat-resistant polymers, Preparation, *Inflammable materials, Polymers, Esters, Polymerization, Halides, Phosphorus compounds, Catalysts, Molding.

A method is claimed for the preparation of self-extinguishing plastics by polymerization of unsaturated halide-containing polyesters with polymerizable and halide-containing vinyl, allyl or acryl compounds with additions of phosphorus compounds in the presence of catalysts in a mold. The method is characterized by the fact that α-oxyalkyl phosphonic acid dialkyl and divinyl esters, respectively, are utilized as phosphorus compounds.

Shal'nev, K. K.
EROSION CAVITATION OF PLASTICS. Jan 62, 3p. 4 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 139, no. 1, p. 60ff.

DESCRIPTORS: *Plastics, Erosion, Cavitation, Fluorination, *Corrosion research, *Chemical engineering.

Uskov, I. A. Kusnitsyna, T. A. and others.
FILLED POLYMERS. V. INCORPORATION OF AMINATED BENTONITE IN POLYCAPROLACTAM. 21 Mar 62 [2]p. AID rept. 62-34.
Order from OTS or SLA $1.10 62-24490
Abstract trans. of Vysokomolekulyarnye Soedineniya (USSR) 1962, v. 4, no. 1, p. 95-97.

DESCRIPTORS: *Bentonite, *Plastics, Polymers, *Additives, Reinforcing materials, Mechanical properties, Powders, Molecular weight, Hardness.

Aminated bentonite proved to be an active filler in polycaprolactam. The degree of amination effects hardness: the hardness is higher, if under- or over-aminated bentonites are used. The explanation offered is that a certain degree of polarity is necessary for maximum development of the filler's activity. (Extracted) (See also 62-17288)

Vansheidt, A. A.
ALCOHOLES FENOLICOS COMO SUSTITUYENTES DE RESINAS FENOL-ALDEHIDO TERMORREACTIVAS EN LA FABRICACION DE PLASTICOS (Fenolospirty kak Zameniteli Termoreaktivnykh Fenolaldegidnykh Smol v Proizvodstve Plastmass) (Phenolic Alcohols Employed as Substituents of Thermoplastic Resins in the Manufacture of Plastics). 39p.
CID: 62-76. (text in Spanish).
Order from OTS or ETC $2.20 62-26276

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1956 [v. 29] no. 1, p. 7-21.

DESCRIPTORS: Plastics, Production, Phenolic resins, *Phenols.

Zhivukhin, S. M. and Tolstoguzov, V. B.
THE PREPARATION OF PHOSPHONITRYL CHLORIDE. Pt. 1 of Phosphonitryl Chloride; Its Preparation, Properties and Uses. [1962] 9p. 57 refs.
Order from OTS or SLA $1.10 62-14045

Trans. of Plasticheskie Massy (USSR) 1960, no. 12, p. 14-15.

DESCRIPTORS: *Plastics, *Phosphonitrile chlorides, Preparation, Separation, Chemical analysis.

See also 62-13426

Rubber and Elastomers

Blokh, G. A. and Zdanovich, V. S.
ECHANGE ISOTOPIQUE DU SOUFRE DU 2-MERCAPTO-BENZOTHIAZOLE ET DU SOUFRE ÉLÉMENTAIRE EN PRÉSENCE DES AMINES [Izotopnyi Obmen Sery 2-Merkaptobenztyazola i Elementarnoi Sery v Prisutstvii Aminov] [Isotope Exchange of the Sulphur of 2-Mercapto Benzothiazole With Elementary Sulphur in the presence of Amines] tr. by Fedorovsky. 24 Mar 62 [11]p. 11 refs. CEA Trans. no. R 1585 (text in French).
Order from OTS or SLA $1.60 62-25080

Trans. in French of #Zh[urnal] Obshch[ei] Khim[ii] (USSR) 1958, v. 28 [no. 10] p. 2652-2656.

DESCRIPTORS: *Exchange reactions, *Radioactive isotopes, Sulfur, Thiols, Benzoyl radicals, Thiazoles, Azoles, Amines, Rubber, Vulcanization, Accelerators

Krongaus, A. N., Vorona, S. I., and Unanov, E. I.
A STUDY OF PROTECTIVE MULTI-LAYERED RUBBER FOR X-RAY SHIELDING DEVICES (Issledovanie Zashchitnoi Sloistoi Reziny dlya Rentgenozashchitnykh Ustroistv). 1 Oct 62 [9]p. 1 ref. JPRS: 15507.
Order from OTS or SLA $1.10 62-33304

Trans. of Vestnik Rentgenologii i Radiologii (USSR) 1962, v. 37, no. 3, p. 60-62.

DESCRIPTORS: *X-rays, *Shielding, Sheets, *Synthetic rubber, Rubber, Lead, Absorption, Radiochemistry, Voltage, Additives, Safety, Protective clothing, X-ray absorption analysis, X-ray filters.

Zanemonets, N. A. and Fogel', V. O.
A NEW METHOD OF DETERMINATION OF THE HEAT EFFECTS OF THE VULCANIZATION REACTION OF RUBBERS, tr. by G. F. Hill. 20 Jan 62 [12]p. 8 refs. AOMC Trans. nr 5-62.
Order from OTS or SLA $1.60 62-15513

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Khimiya i Khimicheskaya Tekhnologiya (USSR) 1959 [v. 2] no. 3, p. 437-442.

DESCRIPTORS: *Thermodynamics, *Vulcanization, *Rubber, Heat, Kinetic theory, Combustion, Thermal conductivity, Calorimetry.

A new method is proposed for the determination of the heat effects of the vulcanization reaction by means of composing heat balances on the basis of thermographic analyses (method of thermographic balances). The new method was verified in the investigation of the heat effects of the vulcanization reaction of ebonites made from butadienestyrol rubbers and gave positive results. The method is used for investigation of the kinetics of heat liberation and to obtain initial data for calculations of the processes of the vulcanization of rubbers. (Author)

Albrecht, J. and Falter, K.-A.
COMPARATIVE ASSESSMENTS OF THE PRINTABILITY OF PRINTING PAPERS. Apr 62, 13p. (figs. omitted) 15 refs.
Order from SLA $1.60 62-16508

Trans. of [das] Papier (West Germany) 1961, v. 15, no. 10a, p. 610-625.

DESCRIPTORS: *Papers, *Printing, Quality control, Statistical functions, *Ink.

Balganova, A. D.
EMPLEO DE SILICATO ACTIVADO PARA AUMENTAR EL GRADO DE RETENCION DE CAOLIN EN LA FABRICACION DEL PAPEL (Izpol'zovanie Aktivirovannogo Silikata dlya Uvelicheniya Uderzhivaemosti Kaolina) (Utilisation of Activated Silicate to Increase the Degree of Kaolin Retention in Paper Manufacture). 12p. CID: 62-28. (text in Spanish).
Order from OTS or ETC $1.10 62-26228

Trans. of Bumazhnaya Promyshlennost' (USSR) 1958 [v. 33] no. 4, p. 21-23.

DESCRIPTORS: *Paper, Manufacturing methods, *Silicates, Clays

Boguslavskii, L. and Markhlevskaya-Shraer, Y.
UTILIZACION DE LA PAJA DE ARROZ EN LA INDUSTRIA DEL PAPEL DE LA REPUBLICA POPULAR HUNGARA (Ispol'zovanie Risovoi Solomy v Bumazhnoi Promyshlennosti Vengerskoi Respubliki) Rice Straw Utilisation in the Paper Manufacturing Industry of the Hungarian People's Republic). 15p. CID: 62-3. (text in Spanish).
Order from OTS or ETC $1.20 62-26203

Trans. of Bumazhnaya Promyshlennost' (USSR) 1958 [v. 33] no. 8, p. 22.

DESCRIPTORS: Rice, Straw, *Paper, Hungary

Bondarenko, S. S.
APARATO PARA CONTROLAR EL PROCESO DE COCCION DE LA PASTA (Pribor dlya Kontrolya za Protsessom Varki Tsellyulozy) (Apparatus for the Control of the Pulp Boiling Process). 5p. (foreign text included). CID: 62-48. (text in Spanish).
Order from OTS or ETC $0.80 62-26248

Trans. of Bumazhnaya Promyshlennost' (USSR) 1956, [v. 31] no. 5, p. 21.

DESCRIPTORS: *Wood pulp, Control

Brecht, W. and Kirchner, U.
THE AIR CONTENT OF PAPER PULP SUSPENSIONS. Mar 62, 10p. (figs. omitted) 5 refs.
Order from SLA $1.10 62-16505

Trans. of das Papier (West Germany) 1961, v. 15, no. 10a, p. 625-634.

DESCRIPTORS: *Paper, Production, Air, Absorption, Bubbles, Foams, Stability, *Wood pulp, Water, Drainage, Milling machines, Particles.

Brecht, W. and Weitzel, W.
THE SPECIFIC CLEANING ACTION OF DIFFERENT TYPES OF WIRE SPRAY PIPES. Mar 62, 7p. (figs. omitted) 5 refs.
Order from SLA $1.10 62-16504

Trans. of [das] Papier (West Germany) 1961, v. 15, no. 10a, p. 635-643.

DESCRIPTORS: Paper, Production, *Milling machines Pipes, *Cleaning, Water, *Spray nozzles, Consumption, Reduction, Liquid jets, Wire screens, Water filters, Water impingment

A mathematical procedure is given for calculating the tension in the various parts of the wire, the tractive force required, and the distribution of the tractive forces between the two driving rolls, for calculation of the power of the electric drive. In this procedure the vacuum in the couch roll is taken into account. A method of solving the problem is given.

Dzhuns, K.
SECADO ACELERADO DEL PAPEL (Uskorennaya Sushka Bumagi) (Accelerated Drying of Paper). 11p. (foreign text included) CID: 62-100. (text in Spanish).
Order from OTS or ETC $1.05 62-26300

Trans. of Bumazhnaya Promyshlennost' (USSR) 1961 [v. 36] no. 5, p. 29-30.

DESCRIPTORS: *Paper, Dehydration

Gavelin, G.
ANALYSIS METHODS FOR STUDYING CURL IN PAPER. Apr 62, 6p. (figs. omitted) 5 refs.
Order from SLA $1.10 62-16506

Trans. of Norsk Skogindustri (Norway) 1962, v. 16, no. 2, p. 58-64.

DESCRIPTORS: *Paper, *Wood pulp fibers, Statistical functions, Test methods, Moisture.

Examples show which methods can be used to study curl and how by means of them a papermachine can be analysed to determine which factors are the chief ones responsible for the occurrence of curl.

Geenen, H.
NEW ROUGHNESS TESTER AND ITS CONTRIBUTION TO THE EVALUATION OF PRINTABILITY. Feb 62 [9]p. (figs. table omitted) 1 ref.
Order from SLA $1.10 62-16511

Trans. of [de] Papierwereld (Netherlands) 1961, v. 16, no. 3, p. 63-65, 68, 73; no. 4, p. 91-95, 97, 100-103.

DESCRIPTORS: *Paper, *Printing, Test equipment, Reproduction, Photographic paper, Quality control, Surfaces.

The difference between the smoothness achieved by dynamic supercalendering and by glazing between steel plates was studied. With approximately the same roughness mean values, the non-uniformity in roughness or the uniformity in smoothness in papers glazed between two steel plates was greater than in paper calendered between steel rolls and paper bowls. The smoothness in calendered paper, however, proved to be most stable under the influence of moisture. For high calendered smoothness the use of the dry calender on the paper machine is to be recommended. The influence of paper temperature, when the paper is damped, on the smoothness of the calendered paper has also been studied. Paper damped while hot (the cooling cylinders of the machine were not cooled) was always smoother after calendering and showed less scatter in the roughness values than paper cooled before damping. (Author)

Hammer, Horst.
PREVIOUS EXPERIENCES OBTAINED FROM EXPERIMENTS IN THE MANUFACTURE OF CARDBOARD FROM SUBSTITUTES NOT YET EVALUATED [1962] 5p.
Order from K-H $6.25 K-H 3160-e

Trans. of Woch[en]bl[att für] Papierfabr[ikation] (West Germany) 1949, v. 77, p. 168-169.

DESCRIPTORS: *Paper, Manufacturing methods, Substitutes.

Kuznetsov, N.
PROPUESTAS DE RACIONALIZACION (Predlozheniya Ratsionalizatorov) (Suggestions on Standardisation). 4p. CID: 62-86. (text in Spanish).
Order from OTS or ETC $0.75 62-26286

Trans. of Bumazhnaya Promyshlennost' (USSR) 1955, [v. 30] no. 8, p. 24.

DESCRIPTORS: *Standardisation

Mack, H. and Patt, K.-F.
THE BEATING OF PULPS, ESPECIALLY SEMI-PULPS WITH LABORATORY BEATERS INCLUDING A LABORATORY DISK REFINER. Mar 62, 6p. (figs. table omitted) 8 refs.
Order from SLA $1.10 62-16497

Trans. of W[ochen]bl[att für] Papierfabr[ikation] (West Germany) 1961, v. 89, no. 21, p. 1021-1026 and no. 22, p. 1071-1074.

DESCRIPTORS: *Wood pulp machines, Laboratory equipment, Disks, *Paper, Production, Wood pulp, Cellulose, Lignin, Separation, Fibers, Sheets.

Snellman, Erik, J.
ON PULP DRYERS. [1962] 6p. (figs. omitted).
Order from SLA $1.10 62-16503

Trans. of Paperi ja Puu (Finland) 1959, v. 41, no. 12, p. 604-608 and 610.

DESCRIPTORS: *Paper, Heat transfer, Steam, *Wood pulp fibers, Fiberboard, Blowers, Dehydration.

Veselovskaya, N. P.
LA DECOLORACION DEL CAOLIN Y EL PROCEDIMIENTO DE DETERMINAR LA FIJACION DE LOS PIGMENTOS (Otbelka Kaolina i Sposob Opredeleniya Zakrepleniya Pigmentov) (Decoloration of Kaolin and Pigment Fixing Testing Procedure). 6p. 2 refs.
CID: 62-66. (text in Spanish).
Order from OTS or ETC $0.85 62-26266

Trans. of Bumazhnaya Promyshlennost' (USSR) 1956 [v. 31] no. 6, p. 21.

DESCRIPTORS: *Clays, *Colours, Pigments, Bonding, Determination

Werr, Friedrich.
DETERMINATION OF THE GREASE RESISTANCE OF PAPER, PT. III. [1962] 29p. (figs. omitted) 2 refs.
Order from SLA $2.60 62-16495

Trans. of das Papier (West Germany) 1961, v. 15, no. 9, p. 415-427.
Other translations are available from SLA $2.60 as 62-10309, Oct 61, 21p. and $1.60 as 62-16200 [1962] 17p.

DESCRIPTORS: *Paper, Greases, Resistance, Determination, Test methods.

MATHEMATICS

Duvakin, A. N. and Letov, A. M.
ON THE STABILITY OF CONTROL SYSTEMS WITH TWO CONTROLLERS. [1961] [11]p. 4 refs.
Order from OTS or SLA $1.60 62-10185

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1954, v. 18, p. 163-166.
Another trans. is available from OTS $1.60 as AD-264 153, STL-TR-61-5110-17, May 61, 12p.

DESCRIPTORS: *Control systems, Linear systems, *Differential equations, Perturbation theory, *Functions, Inequalities, Stability, Theory, Time, Motion.

An analysis is presented on the control system described by a differential equation. The problem is to determine the sufficient conditions for the asymptotic stability of the trivial solution of the control system for any finite initial perturbations. Details are given on the construction of the Lyapunov function. Results are used to determine the sufficient conditions for the stability of the trivial solution of an n + 2 order system whose characteristic equation of the first approximation has a zero root of multiplicity two. An example is given which considers a control system with two controllers. (ASTIA abstract)

Kolmogorov, A.
ON THE ANALYTICAL METHODS OF PROBABILITY THEORY. [1961] [61]p.
Order from SLA $6.60 62-10151

Trans. of [Mathematische Annalen] (Germany) 1931, v. 104, p. 415-458.

DESCRIPTORS: *Probability, Statistical processes, Measure theory, Differential equations.

Pliss, V. A.
AN INVESTIGATION OF ONE NONLINEAR SYSTEM OF THREE DIFFERENTIAL EQUATIONS. [1961] [9]p. 6 refs.
Order from OTS or SLA $1.10 62-10172

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 117, no. 2, p. 184-187.
Another trans. is available from OTS $1.10 as AD-264 058, STL-TR-61-5110-19, May 61, 9p.

DESCRIPTORS: *Nonlinear differential equations, *Differential equations, Functions, Integrals, Nonlinear systems.

Statements (without proof) are given for two lemmas and twelve theorems yielding constraints on system parameters and nonlinearity for asymptotic stability in the large and boundedness of solutions of a system of the following three Aizerman-type equations: $dx = y - f(x)$, $dy = z - x$, and $dz = ax - bf(x)$. A method is also advanced for constructing a Lyapunov function for Aizerman-type systems these Lyapunov functions are of the form: integral of the nonlinearity plus a quadratic form in the state variables. Two of the twelve theorems yield sufficient conditions for the existence of periodic solutions of the above system much of the discussion evolves about when satisfaction of the generalized Routh-Hurwitz implies stability in the large for the null solution. No examples or indication towards practical application of the theorems is given. (ASTIA abstract)

USSR COMPUTER ENGINEERING. 24 Sep 62 [10]p. JPRS: 15413.
Order from OTS or SLA $1.10 62-33119

Trans. from Turkmenskaya Iskra (USSR) 1962, 28 July; and Sovetskaya Latviya (USSR) 1962, 28 July.

DESCRIPTORS: *Computers, Digital computers, Scheduling, Economics, Engineering.

Contents:
Computer engineering at the service of the national economy, by A. Sirotin
Advances in USSR computer technology, by A. Dneprovskii.

Glushkov, V. M.
DESIGNING PRINCIPLES OF A UNIVERSAL READING AUTOMATON. 17 Sep 62 [14]p. 5 refs. JPRS: 15303.
Order from OTS or SLA $1.60 62-33016

Trans. of Avtomatyka (USSR) 1962, no. 1, p. 55-64.

DESCRIPTORS: *Reading machines, Design, Pattern recognition, Digital computers, Computers.

Platonov, V. M., Monko, Ya. D., and Bergo, B. G.
THE "URAL" DIGITAL COMPUTER AS AN AID IN CALCULATING UNSTEADY-STATE RECTIFICATION. Jan 62, 5p. 2 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1961, no. 6 [p. 424-430].

DESCRIPTORS: *Chemical engineering, *Digital computers, *Rectifiers, Mass transfer, Towers (Chemistry).

Vishnevetskii, A. I. and Sergienko, I. S.
PARAMETRON NEW SWITCHING DEVICES. 25 June 62 [48]p. 19 refs. USASIA Trans. Log no. 1348.
Order from OTS or SLA $4.60 62-25649

Trans. of mono. [Parametron; Novye Pereklyuchayushchie Elementy] Moscow, 1961 [66p].

DESCRIPTORS: *Digital computers, Computers, *Switching circuits, Trigger circuits, Circuits, Semiconductors, Diodes, Delay lines, Magnetic cores, Printed circuits, Design, Operation, Computer logic.

This pamphlet discusses only the basic processes that describe the parametron's operation and contains general recommendations for the use of new switching elements in computer installations. (Author)

Brandenberger, H.
NUMERICAL CALCULATION OF WORK-HARDENING IN COLD-STRETCHING AND COLD-UPSETTING. [1962] 10p. (figs. formulae refs. omitted).
Order from SLA $1.10 62-16936

Trans. of Schweizer Archiv [für Angewandte Wissenschaft und Technik] 1947 [v. 13, no. 8] p. 232-238.

DESCRIPTORS: *Stresses, *Elasticity, *Deformation, Structures, Hardening, Numerical analysis.

Brandenberger, H.
NUMERICAL CALCULATION OF WORK HARDENING IN COLD-STRETCHING AND COLD-UPSETTING (CONCLUSION). [1962] 10p. (figs. refs. formulae omitted).
Order from SLA $1.10 62-16937

Trans. of Schweizer Archiv [für Angewandte Wissenschaft und Technik] 1947, v. 13, no. 9, p. 268-275.

DESCRIPTORS: Fluid mechanics, Solids, Stresses, *Distortion, *Elasticity, Number theory, Equations, Hardening, Lattices, Fatigue (mechanics), Particles, Load distribution, Test methods.

Ishlinskii, A. Yu.
ON THE THEORY OF THE GYROSCOPIC PENDULUM. [1958] 16p. 3 refs. MDF I-114.
Order from OTS $0.50 62-11277

Trans. from Prikladnaya Matematika i Mekhanika (USSR) 1957, v. 21.

DESCRIPTORS: *Gyroscopes, *Compasses, Theory, Equations of motion, Inertia.

Problems of the motion of a physical pendulum and of a 2-rotor gyroscopic compass were studied within the limits of elementary precession gyroscope theory. Their suspension point moved over the surface of the earth which was arbitrarily assumed to be a non-rotating sphere. Equations were derived for the general motion of the axis of a gyroscope with a rotor in a Cardan suspension; the sum of the moments of the base forces acting on the outer suspension ring; the sum of the moments of the outer ring forces acting on the inner ring; and the sum of the moments of the inner ring forces acting on the gyroscope rotor. It was assumed that the kinetic moment of the rotor is directed along its natural axis of rotation, and frictional forces in the axis of the Cardan suspension do not exist. Final equations for the motion of the gyroscopic pendulum were derived that were valid for an arbitrary choice of the xyz coordinate system, with origin at the center of the Cardan suspension, and with the z axis directed along the rotor axis. Equations of the projections of the angular velocity and acceleration of the xyz coordinate system were also derived.

Kopzon, G. I.
VIBRATION OF THIN-WALLED ELASTIC BODIES IN A GAS FLOW [Vibratsii Tonkostennykh Uprugikh Tel v Potoke Gaza]. [1961] 6p. 2 refs. MDF K-137.
Order from OTS $0.50 62-11373

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1956, v. 107, no. 2, p. 217-220.

DESCRIPTORS: *Elastic shells, Vibration, *Gas flow, Supersonic flow, Membranes, Supersonics.

Considered in this note are the vibrations of a thin-walled elastic body (shell) together with a streamlining gas flow. Solved as an example is the problem of the vibrations of an axisymmetric momentless (membrane) shell in a supersonic flow. (Author)

Pflüger, Alf.
ELEMENTARY STATICS OF SHELLS. Apr 61.
Order from McGraw-Hill Book Co., Inc., 330 W. 42d St., New York, 36, N. Y. $8.75

Trans. of mono. Elementare Schalenstatik [W. Berlin, 1957, 112p.].

DESCRIPTORS: *Cylindrical bodies, Elastic shell, *Statics.

Suntsov, N. N.
ANALOGY METHODS IN AEROHYDRODYNAMICS, PT. 1, P. 1-238. 8 Feb 61 [245]p. MCL-278/1+2 [pt. 1] AD-258 805.
Order from OTS or SLA $16.00 61-27038-1

Trans. of mono. Metody Analogii v Aerogidrodinamike, Moscow, 1958, chaps. 1-4, sect. 4 (note: a very small part of sect. 4 is included in 61-27038-2).

DESCRIPTORS: *Hydrodynamics, *Aerodynamics, *Magnetohydrodynamics, Analog computers, Model tests, Textbooks, Magnetic fields, *Magnetism, *Electricity, Electrical networks, Electrolytic cells, *Fluid flow, Shock waves, Hydraulic systems, *Gases, Fluids, Liquids.

This book gives an account of analog methods applicable to the solution of problems in aerohydrodynamics. The first chapter covers general information on analog methods and a short history of their development and application. The second chapter cites the basic equations of aerohydrodynamics to the degree necessary for the introduction of further material. The third, fourth, and fifth chapters are devoted to the exposition of the methods of the electrohydrodynamic, magnetohydrodynamic, and gas-hydraulic analogies respectively. The theoretical bases of the various analog methods are introduced in a simple form suited to the understanding of university students; we have given a description of the appropriate experimental setups, the instruments employed, and the experimental methods. Also for illustration, examples are shown, of solutions with analogue set-ups of individual problems in aerohydrodynamics, such as flow around a single wing pro-

file, flow through a cascade of profiles, the motion of gas in nozzles, etc. The results of solving these problems by analogic methods are compared with the results of theoretical solutions and of wind-tunnel tests. (Author)

Suntosv, N. N.
ANALOGY METHODS IN AEROHYDRODYNAMICS, PT. 2, P. 239-395. 8 Feb 61 [156]p. MCL-278/1 2 [pt. 2].
Order from OTS or SLA $11.50 61-27038-2

Trans. of mono. [Metody Analogii v Aerogidrodinamike, Moscow] 1958, chaps 4, sect. 5 - chap. 7 (note: a very small part of chap. 4, sect. 4 is included).

DESCRIPTORS: *Hydrodynamics, *Aerodynamics, *Magnetohydrodynamics, *Magnetism, *Electricity, *Fluid flow, *Gases, Analog computers, Model tests, Textbooks, Magnetic fields, Electrical networks, Electrolytic cells, Shock waves, Fluids, Liquids, Hydraulic systems.

Aerodynamics and Pneumatics

Keldysh, V. V.
EXACT SOLUTIONS FOR (BEHAVIOR OF) LIFT-PRODUCING SYSTEMS WITH ONE AND TWO PLANE SHOCK WAVES. 29 June 62, 2p. AID rept. 62-94; [NASA N62-14301].
Order from OTS or SLA $1.10 62-32111

Abstract trans. of Inzhenernyi Zhurnal (USSR) 1961, v. 1, no. 3, p. 22-39.

DESCRIPTORS: *Aerodynamics, *Lift, *Hypersonic flow, *Shock waves, Pressure, Drag, Aerodynamic configurations

Klimov, A. M.
FLOW OF A HIGHLY HEAT-CONDUCTIVE GAS IN THE NEIGHBORHOOD OF THE CRITICAL POINT OF A BLUNT BODY. [1961] 6p. 6 refs. MDF K-230.
Order from OTS $0.75 62-11460

Trans. of [Zhurnal] Prikl[adnoi] Mekh[aniki] i Tekhn[icheskoi] Fiz[iki] (USSR) 1960, v. 1, no. 1, p. 138-141.

DESCRIPTORS: *Blunt bodies, *Gas flow, Subsonic flow, Heat transfer, Boundary layer.

An analysis is presented of heat transmission in the neighborhood of a critical point at arbitrary Prandtl numbers.

Zotikov, I. A.
EXPERIMENTAL INVESTIGATION OF THE ABLATION OF BODIES BY HYPERSONIC FLOW (Eksperimental'noi Issledovanie Oplavleniya Tel Sverkhzvukovym Potokom). Jan 62 [12]p. 7 refs. NASA TT F-8168.
Order from OTS or SLA $1.60 62-33204

Trans. of Meteoritika (USSR) 1959, v. 17, p. 85-92.

DESCRIPTORS: *Aerodynamic configurations, *Hypersonic flow, Aerodynamic heating, *Ablation, Heat transfer.

The present work elucidates experimentally some problems of interaction between the hypersonic flow and an axially-symetric body during its ablation. The experiments were performed within wide limits of changes in flow parameters: $M = 1.7$ to 2.8; $T_0 = 400$ to $2,800^{\circ}K$, $Re = 8 \times 10^3$ to 7×10^6, with models made of various materials (Wood's alloy, tin, lead, bismuth, zinc, aluminum, steel). Cone and cylinder were selected as shape of models. In all cases the melting is most intensive on the frontal blunted part of the body, behind the shockwave. In a cone which had been previously tapered the melting started at the peak point, blunting it. The shape of the blunted surface of melting depends upon the parameters which characterize the airflow and the heat transfer. In the experiments with Wood's alloys, tin, aluminum, and steel, this shape, in case of small Re, approaches the blunted ellipsis with the ratio of semi-axes equal to 0.5, As the Re increases, the shape becomes more pointed, and with $R > 10^5$ it acquires the form of spherical frustum of a cone with the angle at the apex of the cone approaching the angle of the frontal surface of an oriented meteorite. The frontal melting surface of cylinders made of zinc and bismuth remained, under same conditions of experiment, flat and perpendicular to the direction of flow during the entire experiment.

Hydrodynamics, Hydraulics, and Hydrostatics

Khokhlov, V. A.
HYDRAULIC LOSS AND FLUID DISCHARGE COEFFICIENTS THROUGH THE ORIFICES OF A CYLINDRICAL SPOOL-VALVE HYDRAULIC PERFORMANCE MECHANISM [Koeffitsient Gidravlicheskikh Poter' i Koeffitsient Raskhoda Zhidkosti Cherez Okna Tsilindricheskikh Zolotnikov Gidravlicheskikh Ispolnitel'nykh Mekhanizmov]. [1961] 8p. 6 refs. MDF K-117.
Order from OTS $0.50 62-11585

Trans. of Avto[matika] i Tele[mekhanika] (USSR) 1955, v. 16, no. 1, p. 64-70.

DESCRIPTORS: *Hydraulic fluids, Fluid flow, *Hydraulic servomechanisms, Servomechanisms, Orifices, Reynolds number.

The character is considered of the variation of the hydraulic loss and fluid discharge coefficients through the orifices of a cylindrical spool-valve hydraulic control of a regulation system. (Author)

Levich, V. G.
MOVEMENT OF DROPS AND BUBBLES IN LIQUID MEDIA. Jan 62, 12p. 34 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Partial trans. of mono. [Fiziko-Khimicheskaya Gidrodinamika] (Physicochemical Hydrodynamics) [2d ed] Moscow, 1959.

DESCRIPTORS: Hydrodynamics, *Bubbles, Absorption, Velocity, Viscosity, Resistance, Diffusion, Mathematical analysis, *Drops.

Skryabin, A. K.
METHOD OF CALCULATING THE HYDRAULIC RESISTANCE IN PIPES ON PUMPING OF VISCOUS AND ELASTO-VISCO-PLASTIC PRODUCTS UNDER CONDITIONS OF HEAT EXCHANGE AND HIGH PRESSURE. 24 Aug 61 [32]p. 12 refs. MCL-994; AD-264 630.
Order from OTS or SLA $3.60 62-24042

Unedited rough draft trans. of [Vsesoyuznyi Nauchno-Issledovatel'skii i Konstruktorskii Institut Khimicheskogo Mashinostroeniya. Sbornik Statei] (USSR) 1958, v. 24, p. 107-125.

DESCRIPTORS: *Petroleum, *Hydraulic pressure pumps, Pipes, Viscosity, Fluid flow, Turbulent flow, Pressure, Heat exchangers, Heat transfer, Mathematical analysis.

During the manufacture of synthetic liquid fuel, a coal-oil paste and a paste-gas mixture must be pumped through pipes and heat exchangers. As they flow under high pressure, this paste and this mixture are heated. This leads to a variation of the physical constants of the mixtures along the route, and in consequence the hydraulic resistance per linear meter also varies. Formulas for calculating the hydraulic resistance in pipes over the entire length of the route have been derived, allowing for the variation of the physical constants with the heating of the paste and the paste-gas mixture. (Author)

Yablonskii, V. S., Asaturyan, A. Sh., and Khizgilov, I. Kh.
TURBULENT DIFFUSION IN PIPES. Jan 62, 3p. 10 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1960, v. 3, no. 3, p. 117-122.
Another trans. is available from OTS or SLA $1.10 as 62-15701, July 60, 6p.

DESCRIPTORS: *Turbulent flow, Hydrodynamics, Liquids, Fluid flow, *Pipes, *Chemical engineering.

Taliev, V. N.
SIDE FLOW OF A LIQUID FROM A CHANNEL OF CONSTANT SECTION (Poputnoe Istechenie Zhidkosti iz Kanala Postoyannogo Secheniya) tr. by M. E. 31 July 62, 6p. 2 refs. I-1643.
Order from OTS $0.50 62-11766

Trans. of Akademiya Nauk SSSR. Doklady [1954] v. 94, no. 4, p. 635-638.

DESCRIPTORS: *Fluid flow, *Liquids, Velocity, Equations of motions, Conformal mapping.

Assume that we have a channel of constant cross section of width H and a side orifice of width h. A liquid flows through the channel, and a portion of the liquid flows through the side orifice. The flow in the channel up to the orifice is equal to Q, while the flow through the orifice is q. An equation is found for the contour of the stream. The solution is carried out for two-dimensional flow by means of conformal mapping applying the method of N. Ye. Zhukovskiy. (Variation of Kirchoff's Method for Determining Motion of a Liquid in Two Dimensions at a Constant Velocity Given for an Unknown Line of Current, in Russian). (Author)

Zaonegin, V. L., Kozachenko, L. S., and Kostyuchenko, V. N.
AN EXPERIMENTAL STUDY OF THE FORMATION OF A GASEOUS BUBBLE AND SPOUT IN AN UNDERWATER EXPLOSION (Eksperimental'noe Issledovanie Razvitiya Gazovogo Puzyrya i Sultana pri Podvodnom Vzryve). [1962] [16]p. (foreign text included) 2 refs.
Order from OTS or SLA $1.60 62-14010

Trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1960, no. 2, p. 120-124.

DESCRIPTORS: *Underwater explosions, *Explosion bubbles, Gases, Hydraulic models, Mathematical analysis.

This paper presents some results of an experimental study of the simultaneous development of a spout and gas bubble, formed as a result of explosions near the free surface of water. The paper also discusses the possibilities of simulating the surface phenomena when exploding large charges with weak charges, under laboratory conditions. (Author)

METALLURGY

AUTOMATION OF METALLURGICAL PROCESSES. 14 Feb 62 [46]p. 16 refs. JPRS: 12485.
Order from OTS or SLA $4.60 62-15938

Trans. of Avtomatyka (USSR) 1961, no. 3, p. 56-78 and 82-87.

DESCRIPTORS: *Metallurgy, *Automation, Boilers, *Blast furnaces, *Control, Fuels, Combustion, Heat transfer, Flames, Temperature, Smelting, Economics, Statistical functions.

Contents:
A boiler furnace as an object of optimalizing control, by A. P. Obolonskyi
Automation of a speed measuring system for hot rolled strips by the correlation method, by S. F. Kozubovs'kyi
Plotting frequency characteristics by the experimental curve of a transitional process, by I. M. Pechoryna
Optimalizing controller of blast furnace economy, by B. M. Rakovs'kyi.

Bernshtein, M. L.
COMBINED THERMOMECHANICAL AND MAGNETIC TREATMENT OF METALS AND ALLOYS. Aug 62.
Order from HB $3.75 HB-5499

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 10, p. 31-36.

DESCRIPTORS: *Metals, *Alloys, *Heat treatment, Magnetic fields, Steel.

Brusnitsyn, Yu. D.
NUEVOS FUNDENTES PARA LA SOLDADURA Y RECARGUE AUTOMATICOS (Novye Flyusy dlya Avtomaticheskoi Svarki i Naplavki) (New Fluxes for Automatic Welding and Resurfacing). 5p. 2 refs. CID: 62-50. (text in Spanish).
Order from OTS or ETC $0.80 62-26250

Trans. of Avtomaticheskaya Svarka (USSR) 1957, [v. 10] no. 4, p. 105-106.

DESCRIPTORS: *Welding fluxes.

Burshtein, D. E.
MECANISMO PARA EL SUMINISTRO AUTOMATICO DE PIEZAS PARA EL ESTAMPADO (Mekhanizmy Podachi Detalei pri Shtampovke) (Mechanism for the Automatic Supply of Parts to a Stamping Mill). 10p. CID: 62-56. (text in Spanish).
Order from OTS or ETC $1.00 62-26256

Trans. from [Avtomobil'naya Promyshlennost'] (USSR) 1955, no. 11.

DESCRIPTORS: *Metal forming presses, Automation

Choul, M.
METHOD FOR THE TESTING OF THE DEEP-DRAWING PROPERTIES OF SHEET METAL. [1962] 10p. (figs. refs. omitted).
Order from SLA $1.10 62-16942

Trans. of la Metallurgie et [la] Construction Mechanique (France) 1943, v. 75 [no. 2] p. 3-6.

DESCRIPTORS: Metals, Sheets, *Drawing (Machine processing), Test methods.

Class, J.
WELDING OF FERRITIC TO AUSTENITIC STEELS (REVIEW OF PROGRESS). [1960] [46]p. 43 refs.
Order from SLA $4.60 62-16845

Trans. of V[ereinigung der] G[rosskesselbesitzer]. Mitteilungen (West Germany) 1959, no. 60, p. 181-207. Another trans. is available from BISI 9 15s as BISI-1516 [1960].

DESCRIPTORS: *Welding, *Steel, Welded joints, *Austenite, Steel tubing, Welds, *Ferrites.

For abstract see Technical Translations 4: 102, 1960.

Dashevskaya, G. U.
HEAT TREATING EQUIPMENT EXHIBITED AT THE ALL-UNION EXHIBITION OF ACHIEVEMENTS OF THE NATIONAL ECONOMY. Aug 62.
Order from HB $3.00 HB-5505

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 10, p. 57-60.

DESCRIPTORS: *Heat treatment, Instrumentation.

Dehalu, G.
THE USE OF PHOTO-ELECTRIC CELLS FOR CONTROLLING THE BASIC BESSEMER PROCESS. Sep 62.
Order from BISI £3 5s BISI-2934

Trans. of Revue Universelle des Mines (France) 1962 [v. 105] ser. 9, v. 18, no. 3, p. 317-324.

DESCRIPTORS: *Photoelectric cells, Control systems, Manufacturing methods, Furnaces.

Filippov, V. I.
CONVEYOR-TYPE QUENCHING AND TEMPERING INSTALLATIONS. Aug 62.
Order from HB $3.75 HB-5503

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 10, p. 46-54.

DESCRIPTORS: *Heat treatment, Electric furnaces, Washing machines, Conveyors.

Filippov, S. I. and Martynov, S. Z.
KINETISCHE GESETZMASSIGKEITEN DER DIREKTEN OXYDATION VON BEIMENGUNGEN GESCHMOLZENEN EISENS. (Kinetic Interrelationships of Direct Oxidation of Mixtures of Melted Iron). 11p. (text in German).
Order from T. I. B. $1.85

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1961, no. 1, p. 5-11. Another trans. is available in English from HB $7.25 as HB-5134, July 61, 2700 words.

DESCRIPTORS: *Oxidation, *Melting, *Iron compounds.

Foresi, M. and Massobrio, G.
PROGRESS IN THE APPLICATION OF OXYGEN IN THE MARTIN FURNACE. [1960] [33]p.
Order from SLA $3.60 62-16868

Trans. of [la] Metallurgia Italiana, 1959, v. 51, no. 7, p. 257-273.
Another trans. is available from BISI £9 15s as BISI-1702 [1960].

DESCRIPTORS: *Open hearth furnaces, Operation, Oxygen, *Roofs, Analysis, Tests.

For abstract see Technical Translations 4: 175, 1960.

Frohberg, M. G.
THE APPLICATION OF THE ION THEORY TO METALLURGICAL SLAGS WITH SPECIAL REFERENCE TO THE OXYGEN AND SULPHUR DISTRIBUTION, tr. by D. A. Sinclair. 1962, 34p. 49 refs. NRCC Technical Trans. 1037.
Order fromNRCC $2.00 NRCC C-4057

Trans. of Arch[iv für das] Eisenhüttenw[esen] (West Germany) 1961, v. 32, no. 9, p. 597-606.

DESCRIPTORS: *Slags, Dissociation, Oxygen, Sulfur, Distribution, *Liquid metals, *Iron, Calcium compounds, Oxides, Dioxides, Silicon compounds, Electrolytes (Physiology), *Ion exchange, Exchange reactions, Metallurgical analysis, Ions, Theory, *Electrochemistry, Mathematical analysis.

Gruber, Helmut.
ELECTRIC FURNACES AND PROCESSES OF MODERN VACUUM METALLURGY. [1962] 20p. (figs. refs. discussion omitted).
Order from SLA $1.60 62-16304

Trans. of VDE Fachberichte (West Germany) 1960, v. 21, p. 150-161.

DESCRIPTORS: *Electric furnaces, *Vacuum furnaces, Metallurgical laboratories, Industrial research.

Gruzin, P. L.
CERTAIN LAWS OF DIFFUSION AND DISTRIBUTION OF ELEMENTS IN ALLOYS. Aug 62.
Order from HB $4.00 HB-5495

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 10, p. 5-13. Another trans. is available from OTS or SLA $1.60 as 61-27630, DSIR LLU M. 3220, Mar 61 [14]p.

DESCRIPTORS: *Alloys, *Metals, Diffusion, Autoradiography, Iron, Steel, Nickel, Cobalt, Iron alloys, Silicon, Chromium, Molybdenum, Carbon.

For abstract see Technical Translations 6: 923, 1961.

Gulyaev, A. Kh.
MODERNIZACION DE LA INSTALACION PARA LA SOLDADURA POR PUNTOS (Modernizatsiya Oborudovaniya dlya Tochechnoi Svarki) (Modernization of a Spot Welding Installation). 12p. CID: 62-89. (text in Spanish).
Order from OTS or ETC $1.10 62-26289

Trans. of [Avtomobil'naya Promyshlennost'] (USSR) 1954, no. 7, p. 27.

DESCRIPTORS: *Spot welding

Kudryavtsev, N. T. and Moroz, I. L.
EFFECT OF ELECTROCHEMICAL TREATMENT ON MECHANICAL PROPERTIES OF STEEL. Aug 62.
Order from HB $3.50 HB-5501

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 10, p. 36-40.

DESCRIPTORS: *Steel, Mechanical properties, *Electroplating, Plating, Cadmium plating, Copper plating, Chromium plating, Tin plating, Lead, Zinc.

Lersmacher, Bernd and Scholz, Siegfried.
PRESSURE SINTERING OF HAFNIUM, ZIRCONIUM AND TANTALUM CARBIDES WITHOUT A BINDING PHASE. [1962] 41p. 20 refs.
Order from SLA $4.60 62-14442

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1961, v. 32, no. 6, p. 421-429. Another trans. is available from HB $17.50 as HB-5246, Apr 62, 6200 words.

DESCRIPTORS: *Hafnium compounds, *Zirconium compounds, *Tantalum compounds, *Carbides, *Sintering, Pressure, Binders.

Mindukshev, V. F. and Terminasov, Yu. S.
X-RAY DIFFRACTION INVESTIGATION OF THE FRAGMENTATION OF BLOCKS AND THE DISTORTION OF THE ATOMIC LATTICE DURING STATIC AND DYNAMIC DEFORMATION OF METALS AT NORMAL AND LOW TEMPERATURES. [1959] 6p. 11 refs. MDF M-125.
Order from OTS $0.50 62-11410

Trans. of #Fiz[ika] Met[allov] i Metallov[edenie] (USSR) 1958, v. 6, no. 6, p. 919-923.

DESCRIPTORS: *Metals, *X-ray diffraction analysis, Fragmentation, Distortion, *Low temperature research, Lattices.

An X-ray diffraction investigation of crystallite distortion and block fragmentation under static and dynamic deformations at both room and liquid nitrogen temperatures was made by means of the K_{α_1} broadening of the (511) and (422) lines for duraluminum and the (331) line for copper. When the line broadening for static deformation at the greatest percentage compression at room temperature achieved 72.4%, and 52.6% for dynamic deformation as compared with the line width of the standard, then the maximum line broadening for static and dynamic compression, respectively, was 103.2 and 102% during deformation in liquid nitrogen. A harmonic-analysis computation showed that the lattice distortions at room temperature achieve a magnitude of 1.10×10^{-3} for statically compressed duraluminum and 0.9×10^{-3} for dynamically deformed duraluminum. The duraluminum samples deformed at low temperature had internal stress of 1.20×10^{-3} for static and somewhat lower (1.16×10^{-3}) for dynamic deformation. The relaxation was increased at room temperature in comparison with that at liquid nitrogen temperature, consequently, the influence of the deformation rate is considerably greater and the stresses generated by hardening under compression are partially reduced by the relaxation, mainly during dynamic compression.

Morinaga, T. and Takakashi, T.
ON THE STUDY OF ALUMINUM SLABS BY SUPERSONIC FAULT DETECTION. [1959] 10p. MDF M122
Order from OTS $0.50 62-11632

Trans. of [Imono] (Japan) 1957, v. 29, no. 7, p. 508-514.

DESCRIPTORS: *Aluminum castings, *Ultrasonic equipment, Detection, *Deformation, Fracture (Mechanics).

A comparatively simple method of supersonic fault detection has been applied successfully to find factors in cast Al slabs. The fault detected by the supersonic method did not always correspond to the location of the blister growing on an annealed Al plate. This disagreement in the results was perhaps caused by many other factors related to the casting process. (Author)

Neuenkirchen, H. von.
OLD AND MODERN PRESSURE WELDING METHODS. [1962] 3p. (figs. refs. omitted).
Order from SLA $1.10 62-16998

Trans. of Schweissen [und] Schneiden (West Germany) 1952, v. 4, no. 10, p. 360-361.

DESCRIPTORS: *Welding, *Flash welds, Welded joints, *Electric welding, Pressure, Temperature.

Pfeiffer, H.
THE EFFECTS OF SELECTIVE OXIDATION IN BINARY AND TERTIARY ALLOYS. Sep 62.
Order from BISI £ 4 10s BISI-2867

Trans. of Zeitschrift für Metallkunde (West Germany) 1961, v. 52 [no. 7] p. 481-488.

DESCRIPTORS: *Oxidation, *Alloys, Wires, *Annealing.

Rabes, F. and Ullsperger, L.
THE LEVEL OF DEVELOPMENT OF THE ALL-BASIC O[PEN] H[EARTH] FURNACE IN THE GERMAN DEMOCRATIC REPUBLIC (GDR). [1960] [29]p. 20 refs.
Order from SLA $2.60 62-16867

Partial trans. (p. 224-232) of Neue Hütte (East Germany) 1960 [v. 5] no. 4, p. 218-232.
Another trans. is available from BISI £5 15s as BISI-1759 [1960].

DESCRIPTORS: *Open hearth furnaces, East Germany.

Reimer, L.
CRYSTALLITE SIZE AND COERCIVITY OF Ni AND Fe LAYERS DEPOSITED ELECTROLYTICALLY AND FROM VAPOR. [1962] 14p. 6 refs.
Order from SLA $1.60 62-16542

Trans. of Z[eitschrift] für Naturforschung (West Germany) 1956, v. 11a, no. 8, p. 649-655.

DESCRIPTORS: *Metal films, *Metallic crystals, Nickel, Iron, *Vapor plating, *Electroplating, Electron microscopy.

Schenck, H., Frohberg, M. G., and Gammal, T. el.
THE SULPHUR EQUILIBRIUM BETWEEN CARBON SATURATED HOT METAL AND LIME SILICA SLAGS. [1960] [16]p.
Order from SLA $1.60 62-16899

Trans. of Arch[iv] f[ür das] Eisenhüttenwesen (West Germany) 1960, v. 31 [no. 1] p. 11-17
Another trans. is available from BISI £ 4 5s as BISI-1641 [1960].

DESCRIPTORS: *Carbon, Chemical equilibrium, *Sulfur, Separation, Iron, Processing, *Slags, Calcium compounds, Oxides, Dioxides, Silicon compounds.

Septier, L., Terrat, S. and others.
IMPROVEMENT IN THE PRODUCTION OF OPEN HEARTH FURNACES HEATED BY LOW CALORIE GAS BY THE INJECTION OF COMPRESSED FLUIDS INTO THEIR GAS BURNERS. [1960] [29]p. 10 refs.
Order from SLA $2.60 62-16897

Trans. of Revue de Métallurgie. [Mémoires Scientifiques] (France) 1959, v. 56, no. 2, p. 179-202 [also in Centre de Documentation Siderurgique. Circulaire d'Informations Techniques (France) 1959, no. 2, p. 445-460].
Another trans. is available from BISI £ 6 as BISI-1693 [1960].

DESCRIPTORS: *Open hearth furnaces, Fuel injection, Industrial production, Gas burners.

Verchenko, V. R. and Petrov, A. V.
LA SOLDADURA AUTOMATICA DE LAS UNIONES DE LAS TUBERIAS EN POSICION FIJA (Avtomaticheskaya Svarka Nepovorotnykh Stykov Trub) (Automatic Welding of Fixed Position Pipe Fittings). 22p. (foreign text included). CID: 62-65. (text in Spanish)
Order from OTS or ETC $1.55 62-26265

Trans. of Svarochnoe Proizvodstvo (USSR) 1956, no. 6, p. 22-26.

DESCRIPTORS: *Pipe fittings, *Welding.

Verge, J., Duflot, J. and others.
APPLICATION OF VACUUM BUBBLING TO THE DEGASSING OF METALS IN THE LADLE. Sep 62.
Order from BISI £ 7 10s BISI-2944

Trans. of Revue de Métallurgie (France) 1961, v. 58[no. 6] p. 465-482.

DESCRIPTORS: *Metals, *Vacuum apparatus, *Bubbles, Gases, *Degasification.

Ferrous Metals

ELECTRIC-WELDED STEEL PIPES WITH A SPIRAL SEAM. 30 July 62 [8]p. JPRS: 14650.
Order from OTS or SLA $1.10 62-32081

Trans. of Standartizatsiya (USSR) 1962, no. 4, p. 46-49.

DESCRIPTORS: *Steel tubing, Steel, *Pipes, *Electric welding, *Welded joints, *Standards, Hydrostatic pressure.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET FERROUS METALLURGY (50). 12 July 62 [22]p. JPRS: 14440.
Order from OTS or SLA $2.60 62-32011

Trans. of Partiinaya Zhizn' (USSR) 1962, no. 7, p. 22-24 and 26-27; Narodnoe Khozyaistvo Kazakhstana (USSR) 1962 [v. 20] no. 2, p. 3-8; and from Pravda, Moscow (USSR) 1962, 18 Apr, p. 3; Ekonomicheskaya Gazeta (USSR) 1962, no. 16[37] p. 23.

DESCRIPTORS: *Metallurgy, Industrial research, Industrial production, Personnel, Mining engineering, Oxygen equipment, Chemical engineering.

Contents:
"Zaporozhstal" plant party members striving for the early fulfillment of the Seven-Year Plan, by I. Bondaletov
All personnel striving for high labor indices at the Sokolovsko-Sarbaiskii mining-concentration combine, by N. Sandrigailo
Oxygen-converter method in metallurgy, by N. Tikhonov
The Sokolovsko-Sarbaiskii mining-concentration combine, by I. Shmel'kov.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET FERROUS METALLURGY (60). 14 Aug 62 [13]p. JPRS: 14841.
Order from OTS or SLA $1.60 62-32436

Trans. from Ekonomicheskaya Gazeta (USSR) 1962, no. 27(48) p. 7 and 27.

DESCRIPTORS: *Metallurgy, Industrial research, *Foundries, Operation, *Ores, Production, Sinters, Smelting, Sintering, *Machines, Construction, Blast furnaces, Iron, *Management engineering, Cast iron

Contents:
Expand the mechanization of foundry operations
Develop the production of ore-flux briquets, by I. Korobov
Future development of the Kursk magnetic anomaly, by N. Efanov.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET FERROUS METALLURGY (64). 29 Aug 62 [26]p. JPRS: 15033.
Order from OTS or SLA $2.60 62-32575

Trans. from Pravda, Moscow (USSR) 1962, no. 178(16034); and Ekonomicheskaya Gazeta (USSR) 1962, no. 26 [47] p. 6-7, 35, 43.

DESCRIPTORS: *Metallurgy, *Industrial research, *Rolling mills, *Steel industry, *Open hearth furnaces, *Silicates, *Zirconium compounds, *Refractory materials, *Blast furnaces, *Nozzles, *Cast iron, High temperature research.

Contents:
Problems of the rolling mill industry in the Soviet Union, by A. Tselikov and others
Open-hearth production problems at the Cherepovets metallurgical plant, by K. Chirkov
Zircon as refractory material, by O. Kulikov
A new high-temperature nozzle for blast furnaces.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET FERROUS METALLURGY (66). 29 Aug 62 [17]p. JPRS: 15045.
Order from OTS or SLA $1.60 62-32573

Trans. of Stroitel'naya Gazeta (USSR) 1962, 29 Apr, p. 3; Torfyanaya Promyshlennost' (USSR) 1962 [v. 39] no. 4, p. 37-38; Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 5, p. 81; Promyshlennaya Energetika (USSR) 1962 [v. 17] no. 6, p. 51.

DESCRIPTORS: *Metallurgy, *Industrial research, Industrial plants, Construction, *Peat, Scientific research, Production, Conferences, Economics, *Steel, Scheduling, *Power drives, *Electrical equipment, Electrical industry.

Contents:
Lagging construction at the Zhdanov Metallurgical Plant imeni Il'ich, by V. Pankratov
Prospects for the utilization of peat in metallurgical production, by N. Shcheptev
Preparation of a coordination plan of scientific research work in ferrous metallurgy, by F. G. Kostenko
All-Union Scientific Technical Conference on Electric Drive in Ferrous Metallurgy, by A. N. Ivanov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 68. 4 Sep 62 [25]p. JPRS: 15095.
Order from OTS or SLA $2.60 62-32878

Trans. of Sotsialisticheskii Trud (USSR) 1962 [v. 7] no. 6, p. 70-75; and from Sovetskaya Rossiya (USSR) 1962, 10 July, p. 2.

DESCRIPTORS: *Metallurgy, Industrial research, *Foundries, Production, Labor.

Contents:
Normalizing work quotas: an important reserve in the development of ferrous metallurgy, by A. Logovatovskii
The neglected foundry industry in the RSFSR, by I. Sankov and others.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 69. 4 Sep 62 [22]p. JPRS: 15114.
Order from OTS or SLA $2.60 62-32872

Trans. of Ekonomicheskaya Gazeta (USSR) 1962, no. 26[47] 23 June, p. 6 and 30.

DESCRIPTORS: *Metallurgy, *Industrial research, *Blast furnaces, Industrial plants, Production, *Steel, Processing.

Contents:
High capacity blast furnace problems at the Krivoi Rog metallurgical plant, by B. Zolotov
Achievements of the "Zaporozhstal'" steel processing plant, by L. Yupko.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 70. 10 Sep 62 [10]p. JPRS: 15207.
Order from OTS or SLA $1.10 62-32894

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 6, p. 3-8, 17-19, 79-80.

DESCRIPTORS: *Metallurgy, *Industrial research, *Iron, Ores, Flotation, Alkyl radicals, Phenyl radicals, Sulfonates, *Hoists, Lift, Casting, *Cast iron, Pipes, Sewage, Electric machinery, *Gravity anomalies.

Contents:
Using alkylaryl sulfonate in the flotation of iron ores, by F. N. Belash and others
Ladle crane with lifting capacity of 630+90/16 tons and span of 22 meters, by D. T. Savchenkov
Centrifugal casting of cast-iron sewage pipes of lipetsk-2 multiple-rotor machines, by E. G. Sorokin and P. S. Golovkin
Concerning the problems of the Kursk magnetic anomaly, by I. P. Shafarenko.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 71. 10 Sep 62 [10]p. JPRS: 15208.
Order from OTS or SLA $1.10 62-32892

Trans. of Ekonomicheskaya Gazeta (USSR) 1962, no. 29[50] 14 July, p. 29, 33, 42.

DESCRIPTORS: *Metallurgy, *Industrial research, Industrial equipment, *Refractory materials, Quality control, *Machine tools, *Steel, Alloys, Production.

Contents:
Introducing new equipment in Chelyabinskaya oblast
A criticism of the quality of refractories, by V. Kazakevich
Integrated development of the Donetsk-Dnepr River region.

Asnis, A. E.
INFLUENCIA DE LA DEFORMACION PLASTICA LOCAL SOBRE LA RESISTENCIA DEL ACERO (O Vliyanii Mestnoi Plasticheskoi Deformatsii na Prochnost' Stali) (Influence of Local Plastic Deformation on the Strength of Steel). 16p. 7 refs. CID: 62-19. (text in Spanish).
Order from OTS or ETC $1.25 62-26219

Trans. of Avtomaticheskaya Svarka (USSR) 1956, [v. 9] no. 3, p. 89-94.

DESCRIPTORS: *Steel, *Deformation, Tensile properties.

Bauer, K. H.
RESULTS OF THE USE OF THE OLP PROCESS FOR THE REFINING OF BESSEMER PIG IRON (WITH DISCUSSION). Sep 62.
Order from BISI £4 15s BISI-2849

Trans. of Centre de Documentation Siderurgique. Circulaire d'Informations Techniques (France) 1962, v. 19 [no. 2] p. 413-429.

DESCRIPTORS: *Cast iron, Refineries, Processing, *Steel.

Bernshtein, M. L. and Kovaleva, A. D.
STRUCTURAL CHANGES IN COLD-WORKED 18-9 Ti & .15 C, 26.7 Cr and 0.73% Ti STEELS. Aug 62.
Order from HB $3.40 HB-5479

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 8, p. 25-30.

DESCRIPTORS: *Steel, *Titanium alloys, *Carbon alloys, *Chromium alloys, Pipes, Steel tubing.

Bratchikov, S. G.
STUDY OF THERMAL CONDUCTIVITY OF PELLETS AND CONCENTRATES. Aug 62, 1800 words.
Order from HB $4.90 HB-5264

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 6, p. 157-163.

DESCRIPTORS: *Iron, *Ores, *Thermal conductivity, Pellets.

Bruch, J.
THE APPLICATION OF X-RAY FLUORESCENCE ANALYSIS TO THE EXAMINATION OF VARIOUS FERRO-ALLOYS. Sep. 62.
Order from BISI £6 5s BISI-2912

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 1] p. 5-15.

DESCRIPTORS: *Steel, X-rays, *Fluorescence, Iron alloys.

[Cihal, Vladimir] and Jezek, J[aroslav].
STRUCTURE AND DISTRIBUTION OF SECONDARY PHASES IN AUSTENITIC STAINLESS STEELS. Aug 62.
Order from HB $2.50 HB-5477

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 8, p. 17-19. Another trans. is available from OTS or SLA $1.10 as 61-28183, CE Trans-1940 [1961] [5]p.

DESCRIPTORS: *Austenite, *Stainless steel, Steel, Phase studies, Chromium compounds, Carbides.

For abstract see Technical Translations 2: 101-102, 1962.

Crussard, C., Lajeunesse, D., and Pomey, G.
EFFECT OF THE ANISOTROPHY OF SHEETS ON THEIR PLASTIC DEFORMATION UNDER UNI-AXIAL AND BIAXIAL STRESSES. [1960] [25]p. 8 refs.
Order from SLA $2.60 62-16900

Trans. of mono. [(paper) presented at a Colloquium on Deep Drawing, held in Paris, 23-25 May 60. Another trans. is available from BISI £5 10s as BISI-1793 [1960].

DESCRIPTORS: *Sheets, Processing, Plasticity, Deformation, *Steel, *Stainless steel, Stresses.

A low carbon steel and three ferritic stainless steels were examined from the point of view of anisotropy of texture. The textures were determined by X-rays and by magnetic methods. The anisotropy of the various mechanical properties (elastic limit, rupturing elongation, tensile strength, coefficient of plastic anisotropy k, exponent of cold working n) were studied by means of test pieces taken in various directions in the sheets. A more profound study of the deformation of the low carbon steel sheets during the course of an expansion test through a circular die showed that the form of the cup approaches a sphere, with variable deviations according to the depth of the cup and the region under consideration. (Author)

Drevermann, Albrecht.
INFLUENCE OF PHOSPHORUS AND NITROGEN ON THE HARDNESS OF RIMMED LOW CARBON STEEL AFTER DIFFERENT PRE-TREATMENTS. [1960] [16]p. 10 refs.
Order from SLA $1.10 62-16889

Trans. of Stahl und Eisen (West Germany) 1960, v. 80, no. 12, p. 801-809.
Another trans. is available from BISI £5 15s as BISI-1789 [1960].

DESCRIPTORS: *Steel, Mechanical properties, *Phosphorus, *Nitrogen, Hardness.

The effect of phosphorus and nitrogen contents on the hardness of Open Hearth steels, steels refined with oxygen-enriched blast or CO_2/O_2 mixtures, basic converter steels and pure iron, submitted to different

heat treatments and different amounts of deformation, were investigated. The phosphorus contents were 0.002 and 0.152% and the nitrogen contents were up to 0.022%. The experiments showed that hardness increased on normalised materials linear with the increasing phosphorus and nitrogen contents, where nitrogen was roughly 10 times more powerful than phosphorus. This linear dependence ramained even after quenching from 920°C in water as well as after 66% cold upsetting. Again the increase in hardness, due to cold working, was greater with rising phosphorus and nitrogen contents; such a dependence of the increase in hardness could however not be observed on quenching. Conversion of hardness to tensile strength showed that in the normalised condition each 0.010% increase in the phosphorus content raised the tensile strength by 0.7 kg/mm^2, whilst each 0.010% increase in the nitrogen content raised tensile strength by about 8 kg/mm^2. It is however, extremely doubtful, whether the normal conversion factor is still applicable at higher phosphorus and nitrogen contents. (Author)

Eckstein, Hans Joachim.
CONTRIBUTION TO THE PROBLEM OF CARBIDE BANDING IN ANTI-FRICTION BEARING STEEL. [1960] 14p. 15 refs.
Order from SLA $1.60 62-16888

Trans. of Neue Hütte (East Germany) 1959 [v. 4] no. 5, p. 304-311.
Another trans. is available from BISI 4 as BISI-1712 [1960].

DESCRIPTORS: *Bearings, Materials, *Steel, Tests, Carbides, Determination.

For abstract see Technical Translations 4: 116, 1960

Eminger, Z. D.
CONCHOIDAL FRACTURES IN NICKEL-VANADIUM STEEL. [1960] [17]p. 23 refs.
Order from SLA $1.60 62-16891

Trans. of Neue Hütte (East Germany) 1959, v. 4 [no. 10] p. 596-608.
Another trans. is available from BISI £5 15s as BISI-1553 [1960].

DESCRIPTORS: *Steel, Fracture (Mechanics), Nickel alloys, Vanadium alloys.

Gulyaev, A. P. and Makarov, V. M.
MARTENSITIC TRANSFORMATION, MECHANICAL PROPERTIES AND STRUCTURE OF AUSTENITIC-MARTENSITIC STAINLESS STEELS. Aug. 62
Order from HB $3.65 HB-5475

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 8, p. 3-9.
An abstract trans. is available from LC or SLA mi$1.80, ph$1.80 in 61-13292, AID-60-56, 22 Sep 60, 3p.

DESCRIPTORS: *Steel, *Martensite, *Austenite, Stainless steel, Mechanical properties, Cooling, Heat treatment.

Hencke, A.
SLAG LADLES MADE OF CAST STEEL. Sep 62.
Order from BISI 6 10s BISI-2890

Trans. of Stahl und Eisen (West Germany) 1962, v. 82[no. 5] p. 268-275.

DESCRIPTORS: *Cast iron, *Cast steel, *Slags, Conveyors, Steel.

Hülsbruch, W.
PROPER HEATING AND HOLDING TIMES IN ANNEALING AND HEAT TREATING OF STEELS. [1962] 14p. (tables figs. refs. omitted).
Order from SLA $1.60 62-16981

Trans. of Stahl und Eisen (West Germany) 1951, v. 71, no. 23, p. 1219-1225 ([Verein Deutscher Eisenhuttenleute (West Germany). Berichte]-700).

DESCRIPTORS: *Steel, Heat treatment, Annealing, Processing, *Austenite, Grains (Metallurgy).

Jentet, M.
THE INFLUENCE OF VARIOUS FACTORS ON THE RESULTS OF THE ERICHSEN TEST. [1960] [13]p.
Order from SLA $1.60 62-16883

Trans. of mono. [(paper) presented at a Colloquium on Deep Drawing, held in Paris, 23-25 May 60].
Another trans. is available from BISI ≈3 as BISI-1791 [1960].

DESCRIPTORS: *Sheets, Processing, Standards, *Steel, Ball mills.

Kolov, M. I. and Terekhova, A. I.
THE HEAT TREATMENT OF COLD-ROLLED DYNAMO STEEL IN COILS. Sep 62.
Order from BISI £5 5s BISI-2869

Trans. of Stal' (USSR) 1958, v. 18 [no. 11] p. 1029-1035.

DESCRIPTORS: *Steel, *Annealing, Magnetic properties, Heat treatment, *Coils.

Kovtun, P. G. and Rozhkov, O. A.
SOME FACTORS AFFECTING THE DEEP DRAWING OF SHEET STEEL. Sep 62.
Order from BISI £3 15s BISI-2904

Trans. of Kuznechno-Shtampovochnoe Proizvodstvo (USSR) 1961 [v. 3] no. 6, p. 7-13.

DESCRIPTORS: *Steel, Sheets, Forging, Drawing (Machine processing)

Krapchin, I. P.
CALCULATING THE TOTAL COST OF STEAM GENERATED IN WASTE HEAT RECOVERY INSTALLATIONS. July 58 [9]p. BISI Trans. no. 957; NLL M. 4093.
Order from OTS or SLA $1.10 62-13206

Trans. of Stal' (USSR) 1958 [v. 18] no. 3, p. 253-256.

DESCRIPTORS: Costs, *Steam power plants, *Steam, *Generators, Heat, Recovery, Installation, *Steel, Production, *Open hearth furnaces, *Waste gases, Fuels, *Auxiliary power plants.

Determining the total cost of steam from recovery installations must be based on general theoretical principles of distribution of expenditure in the process of forming total cost. Products obtained on the basis of recovering waste heat must be regarded as objects of expenditure and, therefore, part of the expenditure on fuel for steel production must be borne by steam from waste heat boilers and evaporative cooling installations. Waste heat from open-hearth production must be evaluated according to the cost of boiler fuel, because its production significance for the national economy is determined by that type of fuel in which there is economy when this waste heat is recovered. In estimating the total cost of steam from recovery plants it is necessary to provide an item "Waste Heat". The quantity of conventional fuel included in this item per unit of steam is defined separately for each kind of steam, according to the heat content of the steam obtained. The economy resulting from the use of waste heat, defined as the difference between economy on fuel and supplementary operational expenditure, is transferred to cheapening expenditure on manufacture of the basic product - steel. This reflects better the total cost of both the basic and the auxiliary products, because it takes into account the real expenditure on steel and steam production. (Author)

Kubyshkina, T. D. [Pevzner, L. M.] and others.
MARTENSITIC TRANSFORMATIONS IN STAINLESS STEELS OF THE AUSTENITIC CLASS. Aug 62.
Order from HB $3.80 HB-5476

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 8, p. 9-17.
An abstract trans. is available from LC or SLA mi$1.80, ph$1.80 in 61-13292, AID-60-56, 22 Sep 60, 3p.

DESCRIPTORS: *Steel, *Martensite, Stainless steel, *Austenite, Cooling, Heat treatment.

Lermusiaux, E.
NEW DEVELOPMENTS IN THE SPHERE OF CONTINUOUS CASTING OF STEEL IN BELGIUM (WITH DISCUSSION). Sep 62.
Order from BISI £4 BISI-2937

Trans. of Berg- und Hüttenmannische Monatshefte (Austria) 1962 [v. 107] p. 127-133.

DESCRIPTORS: *Steel, *Casting, Dies, Oscillation, Hydraulic systems, Industrial plants.

Levitin, V. V. and Syreishchikova, V. I.
GRAIN-BOUNDARY CARBIDE PRECIPITATION DURING TEMPERING OF AUSTENITIC STEEL. Aug 62.
Order from HB $3.60 HB-5478

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 8, p. 20-25.

DESCRIPTORS: *Steel, *Austenite, *Carbides, Precipitation, Heat treatment, *Grains (Metallurgy) *Corrosion inhibition.

Lorang, F.
SCALING AND DESCALING OF WIDE AND NARROW STRIP. Sep 62.
Order from BISI £5 10s BISI-2953

Trans. of Revue Universelle des Mines (France) 1961 [v. 104] ser. 9, v. 17, no. 10, p. 514-524.

DESCRIPTORS: *Steel, Oxidation, *Scale, Countermeasures, Rolling mills.

Malinochka, Ya. N. and others.
SPECIAL TYPE OF PEARLITE IN Fe-C-Si ALLOYS. Aug 62.
Order from HB $2.00 HB-5497

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 10, p. 19-21.

DESCRIPTORS: *Pearlite, *Iron alloys, *Carbon alloys, *Silicon alloys, Alloys, *Steel.

Markovets, M. P.
NOTCH SENSITIVITY OF HIGH STRENGTH STEELS. Aug 62.
Order from HB $3.25 HB-5502

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 10, p. 41-46.
Another trans. is available from OTS or SLA $1.60 as 61-27993, ARGMA Trans-51-61, 18 Aug 61 [11]p.

DESCRIPTORS: *Steel, Mechanical properties, Hardness, Fatigue (Mechanics), Sensitivity, Deformation.

For abstract see Technical Translations 6: 867, 1961.

Marot, J. and Harveng, I.
TERMINATING BASIC BESSEMER CONVERSION.
21 Apr 60 [16]p.
Order from SLA $1.60 62-16896

Trans. of Revue de Métallurgie. [Mémoires Scientifiques] (France) 1959, v. 56 [no. 10] p. 211-220.
Another trans. is available from BISI £4 15s as BISI-1546 [1960].

DESCRIPTORS: *Steel, Processing, Computers, *Mathematical computer data, *Analog computers.

Molinder, G.
ISOTHERMAL TRANSFORMATION DIAGRAMS FOR FOUR SWEDISH STANDARDISED SPRING STEELS.
[1960] [8]p. 8 refs.
Order from SLA $1.10 62-16886

Trans. of Jernkontorets Tekniska Råd (Sweden) 1958, no. 248, p. 155-164.
Another trans. is available from BISI £2 5s as BISI-1602 [1960].

DESCRIPTORS: Sweden, *Steel, Transformations, Phase studies, Helixes, *Springs, Heat treatment, *Ferrites, *Pearlite, *Bainite.

TTT-diagrams are presented for four spring steels included in Swedish Standards. A comparison is made between the diagrams obtained with TTT-diagrams referred to in literature for similar steels. (See also 62-16885)

Molinder, G.
ISOTHERMAL TRANSFORMATION DIAGRAMS FOR SOME SWEDISH STANDARDIZED TEMPERING STEELS. [1960] 21p. 17 refs.
Order from SLA $2.60 62-16885

Trans. of Jernkontorets Teknista Råd (Sweden) 1959, no. 255, p. 405-430.
Another trans. is available from BISI £4 5s as BISI-1603 [1960].

DESCRIPTORS: Sweden, *Steel, Transformations, *Ferrites, Pearlite, *Austenite, *Martensite, Bainite.

TTT-diagrams for ten of the seventeen standardized tempering steels mentioned in MNC 852, Edition 3 are presented.

Netter, Paul.
PRODUCTION, PROPERTIES AND ECONOMIC IMPORTANCE OF RIMMING OPEN-HEARTH STEEL.
[1960] [14]p. 14 refs.
Order from SLA $1.60 62-16869

Trans. of Neue Hütte (East Germany) 1960, v. 5, no. 2, p. 63-69.
Another trans. is available from BISI £5 5s as BISI-1705 [1960].

DESCRIPTORS: *Steel, Mechanical properties, *Open hearth furnaces, Production, Economics.

For abstract see Technical Translations 4: 116, 1960.

Philibert, J., Henry, G. and others.
STUDY OF SOME PHENOMENA RELATING TO THE PRECIPITATION OF CARBIDES IN Ni/Cr AUSTENITIC STEELS. Sep 62.
Order from BISI £8 5s BISI-2573

Trans. of Revue de Métallurgie. Mémoires Scientifiques (France) 1961, v. 58 [no. 8] p. 557-573.

DESCRIPTORS: Steel, Precipitation, *Carbides, *Nickel, *Chromium, *Austenite.

Rabkin, M. A. and others.
EFFECT OF PROCESS FACTORS ON THE DESULFURIZATION OF PIG IRON BY REDUCTION OF SOME ACTIVE METALS. Aug 62, 3400 words.
Order from HB $9.60 HB-5345

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 7, p. 36-43.

DESCRIPTORS: *Cast iron, *Desulfurization, Metals, Reduction, Magnesium, Sulfur.

Rosenstock, H.-G., Klärner, H.-F., Schmidtmann, E.
EFFECT OF CHEMICAL AND OF ROLLING CONDITIONS OF THE YIELD POINT OF KILLED SPECIAL DEEP-DRAWING STEEL. Sep 62.
Order from BISI £3 15s BISI-2930

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 5] p. 281-284.

DESCRIPTORS: *Carbon, *Steel, *Rolling mills, *Mathematical analysis, *Stresses, Melting, Aluminium, Temperature.

Salagean, T.
ALLOYING OF STEELS IN ELECTRIC ARC (WELDING AND FACING) Aug 62, 4200 words.
Order from HB $14.50 HB-5038

Trans. of Metalurgia si Constructia de Masini (Rumania) 1960, v. 12, no. 9, p. 831-836.

DESCRIPTORS: *Steel, *Electric arcs, Welding, Alloys.

Sarrak, V. I. and Entin, R. I.
IRREVERSIBLE TEMPER EMBRITTLEMENT. Aug 62.
Order from HB $3.25 HB-5496

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 10, p. 14-19.

DESCRIPTORS: *Martensite, Aluminum, Boron, *Hydrogen embrittlement, *Steel, Heat treatment.

Schinn, R.
SCATTER OF CREEP STRENGTH OF STEEL X 22 CrMo (W) V 12 1, A JOINT EVALUATION OF GERMAN TESTS. [1960] [15]p.
Order from SLA $1.60 62-16893

Trans. of mono. [(paper) presented at the International Discussions on Long Time Behaviour of High Temperature Steels, held in Düsseldorf, 24-25 June 60].
Another trans. is available from BISI $3 5s as BISI 1804 [1960].

DESCRIPTORS: *Steel, *Creep, *Heat resistant alloys, Mechanical properties, Stresses, *Steel castings, *Chromium alloys, *Molybdenum alloys, *Tungsten alloys, *Vanadium alloys.

All the results at present available in Germany from creep tests on CrMo (W) V-steel were evaluated to obtain minimum and mean value curves between 500 and 600° C. At 500° C the values are insufficiently supported. For this steel, however, this temperature is not of any great significance. In the casts evaluated no effects resulting from the W content could be ascertained. Hardening and tempering has a pronounced effect. Above 550° C with long periods under load this effect becomes insignificant. Accordingly, for low and medium temperatures it is important to adhere to the C content and the correct cold tensile strength. Increasing or reducing the Cr content does not greatly affect the creep strength. (Author)

Sychev, V. I.
THE TECHNICAL LEVEL OF CONSTRUCTION OF METALLURGICAL INDUSTRY ENTERPRISES MUST BE STEADILY RAISED. USSR Industrial Development: Soviet Ferrous Metallurgy no. 74. 20 Sep 62 [9]p. JPRS: 15371.
Order from OTS or SLA $1.10 62-33144

Trans. of Promyshlennoe Stroitel'stvo (USSR) 1962 [v. 40] no. 7, p. 2-3.

DESCRIPTORS: *Metallurgy, Industrial research, Industrial plants, Construction, *Cast iron, *Blast furnaces, Structures, Reinforced concrete, Standardization

Syrovatkin, A.
PIONEER PLANT OF THE THIRD METALLURGICAL BASE IN SIBERIA. USSR Industrial Development: Soviet Ferrous Metallurgy no. 73. 17 Sep 62 [16]p. JPRS: 15301.
Order from OTS or SLA $1.60 62-33025

Trans. of Agitator (USSR) 1962, no. 15, p. 35-37.

DESCRIPTORS: *Metallurgy, *Siberia, Industrial research, Iron, Ores, Geology, Blast furnaces, Smelting, Foundries, Industrial plants, Construction

Tanaka, M. and Okuyama, M.
FLUIDIZED-BED REDUCTION OF IRON ORES WITH NATURAL GAS. Aug 62, 900 words.
Order from HB $3.50 HB-5684

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 4, p. 418-419.

DESCRIPTORS: *Natural gas, *Iron, Ores, Fluidized solids, Reduction.

Tavadze, F. N. and Kovshikov, E. K.
IMPROVEMENTS IN THE HEAT TREATMENT OF FORGING DIES. Aug 62.
Order from HB $2.00 HB-5504

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 10, p. 54-57.

DESCRIPTORS: *Forging, *Dies, *Heat treatment, Steel.

Utevskii, L. M.
ON THE CONNECTION BETWEEN CARBIDE FORMATION IN STEEL DURING TEMPERING AND REVERSIBLE TEMPER EMBRITTLEMENT. Apr 62, 2100 words.
Order from HB $5.25 HB-5569

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 119, no. 1, p. 79-82.

DESCRIPTORS: *Steel, *Carbides, Heat of formation.

Watanabe, S. and others.
ON THE EFFECT OF FLUORSPAR IN THE BASIC OXYGEN LD STEELMAKING PROCESS. Aug 62, 900 words.
Order from HB $3.40 HB-5676

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 4, p. 468-470.

DESCRIPTORS: *Fluorspar, *Steel, *Oxygen.

Zhetvin, N. P. [Podvoiskii, L. N.] and others.
EMBRITTLEMENT OF COLD-DRAWN HIGH-CARBON HIGH-CHROMIUM STEEL Kh 18. Aug 62.
Order from HB $2.75 HB-5480

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 8, p. 30 and 35-38.

DESCRIPTORS: *Steel, *Hydrogen embrittlement, Carbon, Chromium, *Wire.

Light Metals

Dolgov, Yu. S., Khadzhi, D. L., and Grishin, V. L.
BRAZING FOAM ALUMINUM TO SAP-1 MATERIAL AND TITANIUM ALLOY OT4. 26 July 62 [8]p. (figs. omitted) 3 refs. JPRS: 14601.
Order from OTS or SLA $1.10 62-32066

Trans. of #Svarochnoe Prozvodstvo (USSR) 1962, no. 6, p. 18-20.

DESCRIPTORS: *Brazing, *Foamed metals, Sintering, *Aluminum alloys, Powders, Powder metallurgy, *Titanium alloys, Eutectics, Welded joints, Tin plating, Zinc alloys.

Nölle, Werner.
METHOD OF COLD PRESS WELDING OF ALUMINUM PARTS, tr. by J. R-P. 1 Aug 62, 2p.
Order from OTS or SLA $1.10 62-32919

Trans. of printed German patent application D 16645 Ib/49h, cl. 49h, gr. 31/10, internat. cl. B 23k, by Dominitwerke G. m. b. H., appl. filed 23 Dec 53, announced 30 Aug 56.

DESCRIPTORS: *Aluminum, Sheets, Metal plates, *Welding, Manufacturing methods.

Between the parts to be joined an electrolytically oxidized aluminum interlayer is interposed or one of the two parts is electrolytically oxidized. (Author)

Nonferrous (except light) Metals

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET NONFERROUS METALLURGY (33). 30 July 62 [12]p. JPRS: 14635.
Order from OTS or SLA $1.60 62-32075

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 3, p. 3-12; and from Kommunist, Erevan (USSR) 1962, 17 Feb.

DESCRIPTORS: *Metallurgy, *Industrial research, *Supplies, *Copper, Chemical engineering, *Magnetic separation, *Electric machinery, Design, *Rare earth elements, *Minerals, Electrical equipment, Specifications, Boreholes, Hoists, Drilling machines.

Contents:
Shortcomings of the supply system at Alaverdi copper chemical combine, by Zh. Nadzhar'yan
Improved machines put out by the Voronezh beneficiation equipment plant, by D. G. Gorbenko and G. I. Turievskii
High-productivity EKS-1250 and EKS-3000 type electric separators, by L. G. Podkosov and V. A. Aleksandrov
BM-2-type boring mast, by G. A. Chechulin.

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 37. 30 Aug 62 [19]p. JPRS: 15062.
Order from OTS or SLA $1.60 62-32846

Trans. of Gornyi Zhurnal (USSR) 1962 [no. 6] p. 3-6 and 12-14.

DESCRIPTORS: *Industrial production, Metallurgy, *Mining engineering, Transportation, *Automation, *Ores.

Contents:
Progress and obstacles in mechanization and automation at mines, by G. A. Zubkov and V. I. Feigin
The open-cut method recommended for mining operations in the Ukraine, by N. A. Starikov and N. A. Egorov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 38. JPRS: 15094.
Order from OTS or SLA $2.60 62-32876

Trans. of Steklo i Keramika (USSR) 1962 [v. 19] no. 6, p. 1-3 and no. 7, p. 47-48.

DESCRIPTORS: *Metallurgy, *Glass, *Ceramic materials, Industrial production, Cermets, *Slags.

Contents:
New developments in the glass and ceramics fields, by V. I. Degtyarev
News of the Soviet ceramics industry
Technical progress at the porcelain and glass manufacturing enterprised of the Kiev region, by M. G. Krichevskii.

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 39. 7 Sep 62 [29]p. JPRS: 15157.
Order from OTS or SLA $2.60 62-32848

Trans. of Narodnoe Khozyaistvo Kazakhstana (USSR) 1962 [v. 20] no. 5, p. 27-31 and 78-81.

DESCRIPTORS: *Metallurgy, *Industrial research, *Scheduling, Industrial production, *Labor, Industrial plants, Construction, Materials, Industrial equipment, *Transportation, Ores, Smelting, Lead, Copper, Zinc, Titanium, Magnesium, Economics

Contents:
The unsolved problems ot planning and calculating the productivity of labor, by V. Brazhnikov
Chaotic conditions in deliveries of materials and equipment to plants under construction in Kazakhstan, by B. Cheglakov

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 40. 10 Sep 62 [14]p. JPRS: 15210.
Order from OTS or SLA $1.60 62-32896

Trans. from Sovetskaya Rossiya (USSR) 1962, 17 July; Ekonomicheskaya Gazeta (USSR) 1962, no. 30[51] p. 33; Stroitel'naya Gazeta (USSR) 1962, 4 July

DESCRIPTORS: *Industrial production, Metallurgy, *Slags, Cements, Fertilizers, *Refractory materials, *Blast furnaces, Construction.

Contents:
Utilize metallurgical slags
Developing the refractories industry, by A. Kononov
A blast furnace is stolen at Temir-Tau, by K. Seglin
Delays in building the Sinyachikhinskii Plant, by I. Chushev and others.

Aubrée, J. and Rose, C.
MANUFACTURE OF NICKEL STRIPS FOR CATHODES OF SUBMARINE REPEATER TUBES. [1962] [24]p. 14 refs.
Order from SLA $2.60 62-14803

Trans. of Echo des Recherches (France) 1961, no. 40, p. 1-9.

DESCRIPTORS: *Nickel, *Cathodes (Electron tubes), Manufacturing methods, Melting, Forging, Annealing, Cleaning, Radio repeaters, Submarines.

Tonkonogii, A. V.
THE CYCLONE METHOD OF SMELTING COPPER CONCENTRATES [Tsiklonnyi Metod Plaski Mednykh Kontsentratov]. [1959] [21]p. 4 refs.
Order from OTS or SLA $2.60 59-14289

Trans. of [Akademiya Nauk Kazakhskoi SSR, Alma Ata. Vestnik] 1956 [v. 12] no. 6 [p. 79-88].

DESCRIPTORS: *Cyclone furnaces, Aerodynamics, *Smelting, *Copper, Fuel consumption, Waste gases, Sulfuric acid.

The aerodynamic properties of the cyclone principle make it possible to combine development of the surface area of the reacting material with increased incandescent gas velocities in relation to the ore particles. This combination brings about a sharp intensification of the smelting process. The heat intensity in the smelting space of the cyclone chamber is many times higher than in a reverberatory type copper smelter or during suspended feed smelting in a shaft furnace. The combination of roasting and smelting which takes place in the cyclone chamber makes it possible to reduce fuel consumption sharply. Smelting without the use of a carboniferous fuel can be accomplished if the air is preheated to a sufficiently high temperature and the material to be smelted contains the proper quantity of sulfides. The degree of desulfurization in the cyclone method of smelting can be easily regulated, within wide limits, by changing the amount of air fed into the cyclone chamber. Since the combustion products of an industrial size cyclone smelter will contain 9 to 10 percent SO_2, it will be possible to utilize these gases in the manufacture of sulfuric acid. Contamination of the gas flow by dust is very low in the cyclone smelting process, and according to preliminary data it is 1.0 to 2.0 grams/m^3 immediately at the outlet of the settling chamber. (Author)

Structural Metallurgy and Corrosion

Antonovskaya, E. I. and Vil'k, Yu. N.
CORROSION OF COPPER AND ITS ALLOYS IN HYDROFLUORIC ACID [Korroziya Meda i Ee Splavov v Plavikovoi Kislote]. 1 June 62 [9]p. 13 refs. FTD-TT-62-724.
Order from OTS or SLA $1.10 62-32426

Unedited rough draft trans. of Khimicheskaya Promyshlennost' (USSR) 1961, no. 6 [p. 431-432]. A trans. is available in French from OTS or SLA $1.60 as 62-25095, CEA-tr-R1482, 1 Feb 62, [11]p.

DESCRIPTORS: *Corrosion research, *Copper, Copper alloys, Acids, Hydrogen compounds, Fluorides, Peroxides, Sulfides.

Corral, F. Munoz del.
POLARISED LIGHT IN METALLOGRAPHY. APPLICATION TO THE DETERMINATION OF AUSTENITE GRAIN SIZE. [1960] [7]p.
Order from SLA $1.10 62-16887

Trans. of Instituto del Hierro y del Acero (Spain) 1954, v. 7, Oct/Dec, p. 464-467.
Another trans. is available from BISI £2 5s as BISI-1531 [1960].

DESCRIPTORS: *Steel, Microstructure, Light, Polarization, Grains (Metallurgy), *Austenite.

A variant of Vilella's method is described for the determination of the austenite grain size in quenched and

tempered steels, which consists of examining the very lightly etched specimen in polarised light between crossed nicols. A strong contrast, even with very fine grain sizes, is thus easily obtained. (Author)

Feitknecht, W.
THE BREAKDOWN OF OXIDE FILMS ON METAL SURFACES IN ACID ATMOSPHERES AND THE MECHANISM OF ATMOSPHERIC CORROSION: NOTES. [1962] 14p. (figs. formulae tables refs. omitted).
Order from SLA $1.60 62-16990

Trans. of Chimia (Switzerland) 1952, v. 6 [no. 1] p. 3-13.

DESCRIPTORS: Corrosion research, *Iron, Zinc, *Cadmium, *Nickel, *Copper, Acids, Hydrochloric acid, *Oxides, Films.

Krüger, G. and Pohler, O.
EXAMINATION OF A DEFORMED PATENTED STEEL BY THE ELECTRON MICROSCOPE. Sep 62.
Order from BISI £2 10s BISI-2962

Trans. of Schweizer Archiv [für Angewandte Wissenschaft und Technik] 1961, v. 27, Nov, p. 461-463.

DESCRIPTORS: *Steel wire, Deformation, Microstructure, *Electron microscopy.

Kurdyumov, G. V.
NATURE OF THE HARDENED CONDITION IN METALS. Aug 62.
Order from HB $3.75 HB-5498

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 10, p. 22-30.

DESCRIPTORS: *Metals, *Hardening.

Kutaitseva, A. I. and Timonova, M. A.
CORROSION RESISTANCE OF MAGNESIUM ALLOY SHEET. Aug 62.
Order from HB $3.85 HB-5482

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 8, p. 48-53.

DESCRIPTORS: *Magnesium alloys, Sheets, *Corrosion inhibition.

Landa, V. A.
ANWENDUNG DER RÖNTGENMETALLOGRAPHIE BEI HOHEN TEMPERATUREN ZUR UNTERSUCHUNG DER PHASENUMWANDLUNGEN IN OBERFLÄCHEN-SCHICHTEN (Use of X-ray Metallography at High Temperatures for Testing Phase Modulations in Surface Layers). 3p. (text in German).
Order from T.I.B. $1.40

Trans. of Zavodskaya Laboratoriya (USSR) 1960, v. 26, no. 1, p. 71-73.

DESCRIPTORS: *X-rays, Metals, Test methods, *Phase modulation, Surface.

Lauret, P., Tran-Xuan-Thoai, and Altmeyer, G.
CONTRIBUTION TO THE COMPLETE DETERMINATION OF THE STATE OF RESIDUAL STRESSES IN HOLLOW CYLINDERS. [1960] [23]p.
Order from SLA $2.60 62-16890

Trans. of Forschung auf dem Gebiete des Ingenieurwesens (West Germany) 1959, v. 25, no. 2, p. 44-54.
Another trans. is available from BISI £5 15s as BISI-1639 [1960].

DESCRIPTORS: *Cylinders, Stresses, *Metals, Brass, Copper, Steel.

For abstract see Technical Translations 4: 58, 1960.

Piper, E., Hagedorn, H. and others.
ISOLATION AND DETERMINATION OF OXIDE INCLUSIONS IN HIGH CHROMIUM STEELS AND EXPERIMENTAL ISOLATION OF OXIDES IN 18/8 STEELS. [1960] [13]p. 6 refs.
Order from SLA $1.60 62-16898

Trans. of Radex-Rundschau (Austria) 1957, no. 5/6, p. 776-783.
Another trans. is available from BISI £3 15s as BISI-1596 [1960].

DESCRIPTORS: *Steel, Impurities, *Chromium alloys, Oxides, Determination, Separation.

Oxide inclusions in 13% Cr-steel were studied. Care was taken to obtain a uniform attack in order that the entire surface of a cylinder could be used as a sample. This problem was solved by adding ascorbic acid to the electrolyte used hitherto and by adding active coal during the chlorination. The requirement of exposing the oxides in the form and quantity that they exist as inclusions in the steel necessitated the production of ash-free active coal as such coal was not available on the market. The determination of oxide inclusions in 18/8 steels is illustrated. Despite some particular success, these investigations could not yet be conducted. Austenitic steel may only be dissolved by pitting in the electrolyte containing ascorbic acid. Better results were obtained by pre-treating the surface of the steel, in molten olein containing stearic acid prior to the electrolysis. An electrolyte of 20% sodium citrate, 3% sodium chloride and 1% ascorbic acid gave the best results with these steels. (Author)

Pritula, V. A. and Pritula, V. V.
PROTECTION OF UNDERGROUND INSTALLATIONS FROM CORROSION BY STRAY CURRENTS. Aug 62.
Order from HB $4.75 HB-5481

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 8, p. 38-47.

DESCRIPTORS: *Corrosion inhibition, *Pipes, *Underground structures, Drainage.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

FISSION GAS RELEASE FROM URANIUM DIOXIDE. Quarterly rept. no. 1, 1 Nov 60-31 Mar 61, on Contract EUR/C/1928/1/60 i. [1962] 77p.
Order from OTS or SLA $7.60 EURAEC-66

Trans. of rept. from FIAT, S. A., Turin (Italy) 30 Apr 61.

DESCRIPTORS: *Fission products, *Gases, *Uranium compounds, *Dioxides, Sampling, Radiation effects, *Powder metallurgy, Pellets, Instrumentation, *Nuclear physics laboratories, *Potassium compounds, *Pyrophoric materials, *Sulfates, *Reactor fuels, *Reaction kinetics, *Nuclear power plants.

FISSION GAS RELEASE FROM URANIUM DIOXIDE. Quarterly rept. no. 2, 1 Apr-30 June 61, on Contract 021-60-9 RDI. [1962] 15p.
Order from OTS or SLA $1.60 EURAEC-123

Trans. of rept. from FIAT, S. A., Turin (Italy) 31 July 61.

DESCRIPTORS: *Fission products, *Gases, *Uranium compounds, *Dioxides, Selection, Sampling, Radiation effects, *Powder metallurgy, Pellets, *Sintered alloys, Potassium compounds, Pyrophoric materials, Sulfates, Stainless steel, *Containment, *Nuclear physics laboratories, *Reactor fuels, *Reaction kinetics, *Nuclear power plants.

Sample preparation was initiated with Mallinckrodt UO_2 powder. The characterization of the selected pellets is in progress. Experiments were made to investigate the behavior of uranium dioxide sintered pellets at temperatures up to 800°C in the presence of potassium pyrosulphate. The frame of the hot cell was completed together with the stainless steel container. The irradiation container, manipulators and other accessories for samples irradiation were fabricated. (See also 62-32161)

FISSION GAS RELEASE FROM URANIUM DIOXIDE. Quarterly rept. no. 3, 1 July-30 Sep 61, on Contract 021-60-9 RDI. [1962] 15p. 5 refs.
Order from OTS or SLA $2.60 EURAEC-197

Trans. of rept. from FIAT, S. A., Turin (Italy) 31 Oct 61.

DESCRIPTORS: *Fission products, *Gases, *Uranium compounds, *Dioxides, Sampling, Radiation effects, *Power metallurgy, Pellets, *Nuclear physics laboratories, *Reactor cores, Instrumentation, Thermal diffusion, *Nuclear reactions, *Containment, *Reactor fuels, *Reaction kinetics, *Nuclear power plants.

The preparation and selection of irradiation samples were continued. The Mallinckrodt natural UO_2 samples were selected and their characterization was completed with the exception of surface area determination by means of Krypton adsorption technique. Pelletizing of C. E. A. powder has been initiated. The temperature attained in the core of the natural UO_2 standard pellet during irradiation was measured by means of an instrumented capsule. Maximum temperature (about 80°C) is such that fission gas thermal diffusion during irradiation will be negligible. Two reactivity tests were performed by placing and extracting the irradiation container in the core with 6 and 26 standard capsules respectively. (See also 62-32382)

FISSION GAS RELEASE FROM URANIUM DIOXIDE. Quarterly progress rept. no. 4, 1 Oct-31 Dec 61, on Contract 021-60-9 RDI. [1962] 23p.
Order from OTS or SLA $2.60 EURAEC-252

Trans. of rept. from FIAT, S. A., Turin (Italy) 31 Jan 62.

DESCRIPTORS: *Fission products, *Gases, *Uranium compounds, *Dioxides, Selection, Sampling, Radiation effects, *Powder metallurgy, Pellets, Annealing, Shafts, *Nuclear physics laboratories, *Reactor cores, Reactor fuels, *Reaction kinetics, *Nuclear power plants.

The preparation and selection of irradiation samples were completed for Mallinckrodt and C. E. A. natural UO_2. First data on characterization of Mallinckrodt and C. E. A. powders and pellets are reported. Pelletizing of C. N. E. N. powder was initiated. Twelve Mallinckrodt samples of the irradiation program were placed in pile during the last month of the quarter. Two pellets fabricated by Fiat with C. E. A. and Mallinckrodt powders were studied for fission gas retention ability by means of post-irradiation annealing technique applied to small samples. D' values obtained at 1400° C are reported and discussed. The hot cell assembling was completed. All manipulators and shafts for operating the inside mechanisms were readied. Fission gas apparatus was placed inside the cell and its different components separately tested for operation. (Author) (See also 62-33159)

PREPARATION AND IRRADIATION OF U-UC CERMETS AND STOICHIOMETRIC UC. Quarterly rept. no. 3, 15 June-30 Sep 61, on Contract 012-60-5-RDF (3748). [1962] 23p.
Order from OTS or SLA $2.60 EURAEC-220

Trans. of rept. from Commissariat à l'Énergie Atomique, Paris (France) Oct 61.

DESCRIPTORS: Uranium, Carbon, *Uranium compounds, *Carbides, *Cermets, Preparation, Radiation effects, Extrusion, Sintering, *Reactor fuels, Nuclear power plants, *Control rods, Gases, Fission, Diffusion theory, Stability, Load distribution.

Two series of extrusion of a 2 and 4% C uranium-carbide mixture were made in copper pots under the following conditions: high extrusion ratio (R=20) and nominal temperature of 800°C. The sintering rate was considerable and the canning of the rods continuous. The first 4.6% C uranium monocarbide element, sintered under load, was inserted in the pile. The anticipated irradiation period is 95 days. Preliminary experiments with the extraction of fission gas, by annealing after irradiation, give an apparent diffusion coefficient lower than that of UO_2. Carbide prepared by arc fusion appears to be more stable than that prepared by sintering under load.

PREPARATION AND IRRADIATION OF U-UC CERMETS AND STOICHIOMETRIC UC. Quarterly rept. no. 4, 1 Oct-31 Dec 61, on Contract 012-60-5-RDF (3748). [1962] 42p.
Order from OTS or SLA $4.60 EURAEC-247

Trans. of rept. from Commissariat à l'Énergie Atomique, Paris (France) 8 Jan 62.

DESCRIPTORS: Uranium, Carbon, *Uranium compounds, *Carbides, *Cermets, Preparation, Radiation effects, *Extrusion, *Sintering, *Reactor fuels, Nuclear power plants, Difference equations, *Control rods.

Four extrusion tests of U + C mixture with 4% of rough carbon (particulate size distribution between 35 and 50μ) were made in copper pots under the following conditions: extrusion ratio 20, temperature 740° to 800° C, extrusion rate approximately 12 and 30 m/mm. The uranium sintering rate is high, but the U + C reaction practically non-existent. Only the rods extruded at low speeds are correctly canned (without splits). Observation of the natural uranium monocarbide irradiated in EL3 (Saclay) under an average flux of about 3.7×10^{13} n/sq cm corresponding to the position $\alpha = 0.54$ at an 18 MW reactor power during a first cycle of one month, has shown that the fuel-can assembly behaves well (at an average temperature of 620°C). The fabrication of four uranium carbide ring-shaped rods enriched 2.7% ^{235}U is now in process. (See also 62-32327)

RADIOACTIVE CONTAMINATION OF AIR AND WATER IN POLAND IN 1959, tr. by R. P. Ratay. 30 Nov 61, 109p. 20 refs. NP-9934.
Order from OTS $1.25 GAT-Z-5022

Trans. of mono. Skazenia Radioaktywne Powietrza i Wody w Polsce w 1959 Roku, Warsaw, 1960.

DESCRIPTORS: *Radiological contamination, Atmosphere, Water, Nuclear explosions, *Radioactive fall-out, *Radiobiology, Radioactive, Isotopes, *Strontium, Bone, Milk, *Poland

Contents:
Radioactive contamination of air and atmospheric precipitation in Sopot, and contamination of sea water in the South Baltic region, the Danish Straits, the North Sea and the East Atlantic in 1959
Contamination of the air with radioactivity in Łódz in 1959, caused by a nuclear explosion
Contamination of the air with radioactivity in Krakow, caused by a nuclear explosion
Measurement of the activity of radioactive river water and tap water in Krakow
Measurement of the radioactivity of impurities in air, in atmospheric precipitation, in the Vistula and in sea water at stations of the State Hydrologic-Meteorologic Institute in 1959
Measurements of radioactivity in Warsaw in 1959
Gross beta radioactivity in water in Poland in 1959
Partial description concerning research procedures and measurement of radioactivity in air by the suction method
Radioactive contamination of atmospheric precipitation and of waters of the Swider River and drainage water from the center of the grounds of the Institute of Nuclear Research at Świerk in 1959
Results of measurements of Sr^{90} content in human bones, animals, and milk, performed at the Establishment of the Radiological Protection Institute of the Study of Medicine at Łódz in 1959

SINTERED URANIUM OXIDE, SINTERING TECHNIQUE[S] AND BEHAVIOR UNDER IRRADIATION. Quarterly rept. no. 2 (1st quarter 1961) on Contract 031-60-10RDF. [1962] 83p.
Order from OTS or SLA $8.60 EURAEC-57

Trans. of rept. from Commissariat à l'Énergie Atomique, Paris (France) Apr 61.

DESCRIPTORS: *Uranium compounds, *Oxides, Dioxides, *Sintering, *Powder metallurgy, *Sintered alloys, Nuclear power plants, *Reactor fuels, Rotary furnaces, Radiation effects, Binders.

The preparation of uranium dioxide powder suitable for sintering at 1650°C has been perfected: the rotary reduction furnace produces powders with a behaviour reproducible in laboratory where the densities achieved are regularly higher than 95% of the theoretical density. A study was made of the conditions of shaping powders prepared by means of the rotary furnace and of other industrial powders. The use of binders introduces an uncertainty parameter. (See also 62-32323)

[SINTERED URANIUM OXIDE, SINTERING TECHNIQUES AND BEHAVIOR UNDER IRRADIATION]. Quarterly rept. no. 4, 1 July-30 Sep 61, on Contract 031-60-10RDF. [1962] 47p.
Order from OTS or SLA $4.60 EURAEC-194

Trans. of rept. from Commissariat à l'Énergie Atomique, Paris (France) Oct 61.

DESCRIPTORS: *Uranium compounds, *Oxides, Dioxides, *Sintering, *Powder metallurgy, *Sintered alloys, Nuclear power plants, *Reactor fuels, Rare gases, Fission, Diffusion, Thermal stresses, Shock resistance, Rotary furnaces, Radiation effects, Hydrogen, Thermocouples, Cartridge case plugs, Molding, Stainless steel, Soldering.

The conditions for obtaining powders of large specific area from UO_3 in a rotary laboratory furnace were systematically studied at 325°, 350°, 375° and 400°C in reducing mixtures containing 25, 40 and 75% of hydrogen. The parameters, temperature and partial pressure of hydrogen, have opposite effects and a zone was delimited in which the powders which were obtained have an area of about 15 m^2/g. The velocity with which the UO_3 powder passes through the hot zone has also a certain influence. The shaping of UO_2 with lubrication of the surface of the granules was investigated and makes it possible to obtain sintered bodies whose density is higher than after the conventional shaping process at which 3% of an organic ingredient is added. A metallurgical investigation of the passages for stainless steel sheathed thermocouples through the zircaloy plugs for fitting the three-thermocouple cartridges was concluded. (See also 62-33188)

SINTERED URANIUM OXIDE, SINTERING TECHNIQUES AND BEHAVIOR UNDER IRRADIATION. Special rept. no. 1 on Contract 031-60-10RDF. [1962] 21p.
Order from OTS or SLA $2.60 EURAEC-248

Trans. of rept. from Commissariat à l'Energie Atomique, Paris (France) Dec 61.

DESCRIPTORS: *Uranium compounds, *Oxides, Dioxides, *Sintering, *Powder metallurgy, *Sintered alloys, Nuclear power plants, *Reactor fuels, Rare gases, Fission, Diffusion, Radiation effects.

A preliminary study is made of a proposed isothermal diffusion experiment on sintered uranium oxide during irradiation.

SINTERED URANIUM OXIDE, SINTERING TECHNIQUES AND BEHAVIOR UNDER IRRADIATION. Special rept. no. 2 on Contract 031-60-10RDF. [1962] 24p.
Order from OTS or SLA $2.60 EURAEC-249

Trans. of special rept. from Commissariat à l'Énergie Atomique, Paris (France) Dec 61.

DESCRIPTORS: *Uranium compounds, *Oxides, Diosides, *Sintering, *Powder metallurgy, *Sintered alloys, Nuclear power plants, *Reactor fuels, Thermal stresses, Shock resistance, Mechanical properties, Radiation effects, Fracture (Mechanics).

Comparative tests of resistance to thermal stress on sinered uranium dioxide samples showed that the thermal shock resistance of a sintered, cylindrical sample of UO_2 varies inversely with its diameter. (See also 62-32182, 62-32324)

SWELLING OF URANIUM. Quarterly rept. no. 2 (1 Jan-31 Mar 61). Mar 61, 35p. 23 refs.
Order from OTS or SLA $3.60 EURAEC-78

Trans. of rept. from Centre d'Étude de l'Énergie Nucléaire, Brussels (Belgium).

DESCRIPTORS: *Radiation effects, *Uranium, *Platinum, *Niobium, Foils, Annealing, Heat treatment, Deformation, Crystallization, Lattices, Electron microscopy, Fast neutrons.

Ways were sought for making thin foils of uranium, platinum, and niobium.

Abramov, A. I.
MEASUREMENT OF THE CROSS SECTIONS OF INELASTIC NEUTRON COLLISIONS WITH THE NUCLEI OF CHROMIUM, IRON, NICKEL, NIOBIUM, AND MOLYBDENUM AT ENERGIES TO 2.6 MEV. 12 July 62 [7]p. 16 refs. FTD-TT-62-953; AD-284 114.
Order from OTS or SLA $1.10 62-32995

Unedited rough draft trans. of #Atomnaya Energiya (USSR) 1962, v. 12, no. 1, p. 62-64.

DESCRIPTORS: Metals, Chromium, Iron, Nickel, Niobium, Molybdenum, Nuclei, *Neutron cross sections, *Inelastic scattering, Neutron scattering, Scattering, Neutron spectroscopy

Aglintsev, K. K., Ostromukhova, G. P., and Kholnova, E. A.
EMPIRICAL DETERMINATION OF SELF-ABSORPTION ALONG THE AXIS WITHIN PREPARATIONS OF Co^{60} OF CYLINDRICAL FORM (Eksperimental-noe Opredelenie Samopogloshcheniya Vdol Osi v Preparatakh Co^{60} Tsilindricheskoi Formy) [1961] [4]p. 6 refs.
Order from OTS or SLA $1.10 61-28228

Trans. of Atomnaya Energiya (USSR) 1961, v. 10, no. 1, p. 75-76.

DESCRIPTORS: *Cobalt, *Radioactive isotopes, Cylindrical bodies, *Gamma rays, *Absorption, Determination, Dose rate

Chernyshevich, V. N. and Korotkov, L. I.
EXPERIMENTAL INVESTIGATION OF A SCINTILLATION DETECTOR FOR THERMAL NEUTRONS. [1961] [16]p. 12 refs.
Order from OTS or SLA $1.60 AEC-tr-4702

Trans. of mono. Eksperimental'nye Issledovaniya Stsintillyatsionnogo Detektora Teplovykh Neutronov, Moscow, 1960 [19p.].

DESCRIPTORS: *Scintillation counters, *Neutron detectors, Neutron flux density, *Thermal neutrons, Fast neutrons, Gamma rays, Zinc compounds, Sulfides, Boron.

Experimental data on the selection of parameters for a thermal neutron detector based on a mixture of ZnS and boron are presented. The effectiveness of counting the thermal and fast neutrons, and the gamma radiation with the detector was determined as a function of the present content of boron and zinc sulfide, and as a function of the scintillator thickness. Thin scintillators of this type can be used to measure neutron fluxes in the presence of an intense gamma field because of the low sensitivity to gamma radiation and the relatively high sensitivity to thermal neutrons. (Author)

Csongor, Eva.
INVESTIGATION OF THE GAMMA RADIATION ACCOMPANYING THE BOMBARDMENT OF Mg^{24}, Mg^{25}, Mg^{26} WITH Po-ALPHA RADIATION IN HUNGARY. 23 Nov 61 [83]p. JPRS: 11068.
Order from OTS or SLA $8.10 62-19495

Trans. of Magyar Fizikai Folyoirat (Hungary) 1960, v. 8, no. 5, p. 357-415.

DESCRIPTORS: *Magnesium, *Radioactive isotopes, *Polonium, Alpha particles, *Alpha bombardment, *Gamma rays, Nuclear reactions, Scintillation counters, Hungary.

Separate determinations were made of (1) the excitation function of the α radiation, and (2) the spectrum of the γ radiation. To establish the excitation function, a "thin" target of $Mg^{25}O$ and $Mg^{26}O$ of 1.2 millimeters air equivalent was used. From the excitation function the resonance energies were defined and the excited states of the intermediate Si^{29} and Si^{30} nuclei were established. Seven unknown excited states of high level were established for the Si^{29} nucleus and two for the Si^{30}. In the case of Mg^{24} isotope bombardment by Po α rays, the γ radiation accompanying the process is assigned to the excited states of the final product of the $Mg^{24}(\alpha, p)Al^{27}$ process; the lines of the spectrum result from the superimposition of two spectra. The γ lines of low intensity are assigned to the excited states of the final product of the $Mg^{25}(\alpha, p)Al^{28}$ process; and the lines of the spectrum of higher intensity belong to the excited states of the final product of the $Mg^{25}(\alpha, n)Si^{28}$ process. The component of large energy of the γ radiation also belongs to the $Mg^{25}(\alpha, n)Si^{28}$ process. When the Mg^{26} isotope was bombarded by Poα rays, the lines in the spectrum belonged to the excited states of the final product of the $Mg^{26}(\alpha, n)Si^{29}$ process. A micro-electrochemical method was developed for separating Mg from pyridine.

Dejonghe, P.
TREATMENT OF RADIOACTIVE WASTES.
Quarterly rept. no. 1 (2d Quarter, 1960). 1960, 35p. Supersedes TID 12463.
Order from OTS or SLA $3.60 EURAEC-25

Trans. of rept. from Centre d'Étude de l'Énergie Nucléaire, Brussels (Belgium).

DESCRIPTORS: *Radioactive waste disposal, *Incinerators, Asphalt, Towers (Chemistry), Porous filters, *Hydrology.

Investigations are directed towards (1) the elaboration of an incinerator for the simultaneous combustion of lignite and incongruous waste and a study of the insolubilization of radioactive concentrates, and (2) finding a suitable tracer for measuring movements of water in the soil, actually measuring these movements, and establishing the physico-chemical behavior of stored or dumped radioelements.

Dubinskaya, N. and Ulmanis, U.
INVESTIGATION OF THE BACK-SCATTERING OF GAMMA-RADIATION (Issledovanie Obratnorasseyannogo Gamma-Izlucheniya) tr. by A. Pingell. 15 Aug 62, 5p. 6 refs. N R L Trans. no. 910.
Order from OTS $0.50 62-11765

Trans. of Akademiya Nauk Latviiskoi SSSR, Riga. Izvestiya, 1957, no. 7(120) p. 147-150.

DESCRIPTORS: *Gamma rays, Scattering, Atomic number, Gamma ray spectroscopy, Radioactive isotopes.

The intensity of back-scattered gamma-radiation was investigated as a function of the atomic number of the Z-scatterer.

Genthon, J. P.
REACTOR G 1: FLUX CHARTS IN THE FLAT REACTOR (Reacteur G 1: Cartes de Flux de la Pile Plate). Aug 61 [26]p.
Order from OTS or SLA $2.60 AEC-tr-4504

Trans. of Commissariat à l'Énergie Atomique (France) no. 222, Oct 57.

DESCRIPTORS: *Neutron flux density, *Nuclear power plants, Statistical functions, Critical assemblies, Neutron detectors, Counting methods, Control rods, Cadmium, Graphite, Thorium.

The experimental flux distribution was studied for different conditions in the reactor. These distributions are given by points. The flux density at each point is the result of irradiation and counting of a detector followed by plotting of the count. All flux density measurements are relative. (Author)

Kovalevskii, A. L.
ON NATURAL RADIOACTIVE ELEMENTS IN PLANTS. 14 Sep 62 [19]p. JPRS: 15274.
Order from OTS or SLA $1.60 62-33033

Trans. of Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1962, no. 4, p. 108-114.

DESCRIPTORS: *Plants, *Radioactivity, Radium, Isotopes.

Plants show a sharply expressed selective absorptive capacity in respect to isotopes of radium in the uranium and thorium series (and obviously in the actinium series); thus the radioactive equilibrium in them is upset in the direction of an excess of radium isotopes (and their decay products). The laws of accumulation of uranium, radium, and other radioactive elements by plants are different from each other and are determined by their chemical, not their radioactive properties. In spite of the fact that the number of beta decay events due to natural radioactive elements in plants usually exceeds the number of alpha decay events (approximately three times), the ionization of living tissues by alpha particles is greater than the ionization due to beta particles. This is particularly characteristic of leaves, flowers, growing points in shoots, and other parts of plants of small size (thickness). Ionization by heavy alpha particles is in the nature of "bursts" with high linear ionization density with the result that a high concentration of ions is formed in a small volume of living tissues. Ionization by alpha particles can exert an influence which is materially different from ionization by beta particles and gamma radiation. The highest concentrations of natural radioactive alpha emitters in plants are shown by elements of the thorium series: mesothorium and thorium X with decay products.

Marchuk, G. I., Ilyasova, G. A. and others.
CRITICAL MASSES OF URANIUM-GRAPHITE REACTORS. [1961] [18]p. 9 refs.
Order from OTS or SLA $1.60 AEC-tr-4715

Trans. of mono. Kriticheskie Massy Uran-Grafitovykh Reaktorov, Moscow, 1960, p. 1-17.

DESCRIPTORS: *Nuclear power plants, Thermal neutrons, Fast neutrons, Fast reactors, Elastic scattering, Inelastic scattering, *Critical assemblies, *Graphite moderated reactors, *Uranium, Radioactive isotopes, Diffusion theory, Equations, Reactor moderators, Nuclei, *Enriched fuel reactors.

A method is described for the calculation of critical masses of reactors with thermal, intermediate, and fast neutrons. The calculation is based on the diffusion approximation. The many-group system of reactor equations has been setup with allowance for both elastic and inelastic scattering of neutrons by moderator nuclei in the region of epithermal energies. In the thermal group, allowance is made for the thermalization of neutrons. Results of calculations of critical masses of uranium-graphite reactors are given as functions of the enrichment with U-235. (Author)

Orlov, V. V.
ALBEDO EQUATIONS IN THE THEORY OF DIFFUSION AND SLOWING DOWN OF NEUTRONS. [1961] [23]p. 4 refs.
Order from OTS or SLA $2.60 AEC-tr-4719

Trans. of mono. Al'bednye Uravneniya v Teorii Diffuzii i Zamedleniya Neitronov, Moscow, 1960 [p. 1-21].

DESCRIPTORS: *Neutrons, Neutron flux density, *Diffusion, Theory, *Albedo, Neutron age, Determination, Reactor moderators.

Equations for the albedo and for the transmission function of flat, cylindrical, and spherical layers of moderator are formulated within the framework of the diffusion many-group approximation. By going to the limit, we obtain also the corresponding equations in the continuous slowing-down model. The nonlinear equations obtained are similar to the Ambartsumyan equations (Theoretical Astrophysics, available in translation from Pergamon Press, New York, 1959), which are known from the theory of radiation transfer. (Author)

Sachse, G. and Leibnitz, E.
EXTRACTION OF Ru^{106} IN LIQUID RUN-OFF BY ADSORPTION ON FINE PARTICLED MULTIKLON. 28 Nov 61 [8]p. JPRS: 11256.
Order from OTS or SLA $1.10 62-24548

Trans. of Chemische Technik (East Germany) 1961, v. 13, no. 6, p. 364-365.

DESCRIPTORS: Radioactive waste, *Ruthenium, *Radioactive isotopes, Adsorption, Solvent extraction, Fission products.

Shakhparonov, M. I.
TO THE THEORY OF SOLUTIONS. XII. ELECTRICAL POLARIZATION AND MOLECULAR STRUCTURE OF NITROBENZENE AND ACETONE SOLUTIONS. [1962] 12p. 18 refs.
Order from OTS or SLA $1.60 62-16573

Trans. of #Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1961, v. 35 [no. 6] p. 1177-1185.

DESCRIPTORS: *Nitrobenzenes, *Acetones, Carbon tetrachloride, Benzenes, *Solutions, Theory, Polarization, Molecular structure.

The correlation between the molecular polarizability and the structure of nitrobenzene - carbon tetrachloride, acetone-benzene, acetone-carbon tetrachloride and acetone-nitrobenzene solutions has been examined. Based on the earlier developed theory permitting the effect of concentration fluctuations to be taken into account, it has been shown that stable associates of acetone and nitrobenzene molecules are not formed in these solutions. The deviation from additivity of the dielectric constant of these solutions is due to concentration fluctuations. (Author)

Varshavskii, Ya. M. and Vaisberg, S. E.
RECENTES METHODES DE PRODUCTION DE L'EAU LOURDE (Sovremennye Methody Proizvodstva Tyazheloi Vody) [Modern Methods of Producing Heavy Water] tr. by Mme. Authier. 28 Dec 61 [45]p. 32 refs. CEA Trans. no. R 1458 (text in French).
Order from OTS or SLA $4.60 62-25093

Trans. in French of Khim[icheskaya] Nauk[a i] Promyshl[ennost'] (USSR) 1959, v. 4 [no. 4] p. 498-509.
A trans. is available in English from OTS or SLA $3.60 as 62-19758, JPRS-12674, 21 Feb 62 [37]p.

DESCRIPTORS: *Heavy water, Heavy water reactors, Costs, Industrial production, Deuterium, Recovery, Water, Electrolysis, Hydrogen, Isotope separation, Liquid hydrogen, Heat exchangers, Towers (Chemistry).

Instruments and Installations

NEW DEVELOPMENTS DESIGNED BY VEB VAKUTRONIK. 30 June 60 [9]p. (3 figs. omitted). USASIA: SC-121b/60; JPRS: R-859-D.
Order from OTS or SLA $1.10 60-31344

Trans. of die Technik (Germany) 1960 [v. 15] no. 3, Messeheft, p. 196-198.

DESCRIPTORS: *Radiation instruments, Radiation counters, Air, Radioactivity, Measurement, Instrumentation, Design.

Chirkov, A. K.
MEASUREMENT OF WEAK MAGNETIC FIELDS BY THE ELECTRON RESONANCE METHOD. 7 Mar 60 [6]p. 10 refs. USASIA SC-59i/59; JPRS: R-428-D.
Order from OTS or SLA $1.10 62-32760

Trans. of #Pribory i Tekhnika Eksperimenta (USSR) 1959, no. 2, p. 36-38.

DESCRIPTORS: *Magnetic fields, Measurement, *Magnetometers, Resonance absorption, *Nuclear magnetic resonance.

The possibility is shown of applying organic radicals and a solution of sodium in liquid ammonia for measurement of the strength of a weak heterogeneous magnetic field in the range from 0.4 to 21 oersteds. Error in field measurement is 1 to 0.01 percent. (Author)

Davidchuk, L. Ya. and Chmutov, K. V.
INDICADOR SIMPLE DE RADIACTIVIDAD (Prostoi Indikator Radioaktivnosti) (Simple Radioactivity Indicator). 5p. CID: 62-97. (text in Spanish).
Order from OTS or ETC $0.80 62-26297

Trans. of [Zhurnal] Fizicheskoi Khimii (USSR) 1956, v. 30, no. 12, p. 2807.

DESCRIPTORS: *Radiation counters.

Drozdov, N. G., Gorelov, N. I. and others.
SEMICONDUCTING CADMIUM SULFIDE DETECTORS OF GAMMA-RADIATION (Poluprovodnikove Sernistokadmievye Detektory Gamma-Izlucheniya) tr. by A. Pingell. 1962, 9p. 2 refs. N R L Trans. no. 909.
Order from OTS $0.50 62-11777

Trans. of Elektrichestvo (USSR) 1962, no. 1, p. 49-51.

DESCRIPTORS: *Gamma rays, Detection, Crystal detectors, *Detectors, Semiconductors, *Cadmium compounds, *Sulfides, Photosensitivity, Inertia, Stability.

Specimens of cadmium sulfide had a high sensitivity to gamma-radiation with relatively low voltage supply sources and a good linear dependence of the photocurrent on the intensity of gamma-radiation dosage. This insures the possibility of their practical usage for the purpose of dosimetry in cases where inertia has no significant value, and also as γ-relays in various automatic systems operating under the action of X-ray or gamma radiation. At a high intensity of the dosage such γ-relays may be utilized in high-speed systems.

Gertsiger, L. N.
REMOTE CONTROL MAGNETIC FIELD STRENGTH METER. 7 Mar 60 [6]p. 2 refs. USASIA SC-59h/59; JPRS: R-427-D.
Order from OTS or SLA $1.10 62-32761

Trans. of #Pribory i Tekhnika Eksperimenta (USSR) 1959, no. 2, p. 33-35.

DESCRIPTORS: *Magnetic fields, Measurement, Remote control systems, Nuclear resonance, Resonance absorption, *Nuclear magnetic resonance, *Magnetometers.

Description is given of an instrument for measuring the strength of fixed magnetic fields in gaps between large magnets in the range from 0.3 to 20 kiloersteds. Instrument is based on use of the method of nuclear magnetic resonance. Oscillator frequency control is accomplished by means of a siegnetto-electric capacitor. (Author)

Orlov, Yu. F.
APPLICATION OF QUADRATIC NONLINEARITY IN A STRONG FOCUSING ACCELERATOR. 7 Mar 60 [10]p. 7 refs. USASIA SC-59a/59; JPRS: R-420-D.
Order from OTS or SLA $1.10 62-32768

Trans. of #Pribory i Tekhnika Eksperimenta (USSR) 1959, no. 2, p. 8-11.

DESCRIPTORS: *Electron accelerators, Accelerators, Electron beams, Focusing, *Betatrons, Frequency, Stability.

With the aid of quadratic nonlinearity, it is possible to decrease the dependence of betatron frequencies on the pulse. In particular, the effect is appropriate to use for eliminating dangerous synchrobetatron resonances originating in large multiples of the accelerating voltage frequency. (Author)

Spurny, Z.
PERSONNEL MONITORING SYSTEMS. 21 Dec 61 [7]p. JPRS: 11633.
Order from OTS or SLA $1.10 62-19616

Partial trans. (some parts summarized) of Lekarsky Obzor (Czechoslovakia) 1961, v. 10, no. 3, p. 135-139.

DESCRIPTORS: *Personnel, *Monitors, Radiation instruments, *Dosimeters, *Radiation alarms.

Nuclear Engineering and Power

AN ADVANCED RESEARCH PROGRAM ON THE APPLICATION OF STEAM-WATER SPRAY TO THE COOLING OF LIGHT WATER REACTORS. CAN 2 Quarterly Progress Rept. no. 1, 1 July-30 Sep 61, on Contract 060-61-7-RDI. 15 Oct 61, 12p. 1 ref. CISE Rept. R-47.
Order from OTS or SLA $1.60 EURAEC-173

Trans. of rept. from Centro Informazioni Studi Esperienze (Italy).

DESCRIPTORS: *Light water reactors, *Reactor coolants, Steam, Water, Mixtures, Heat transfer, Hydrodynamics, Corrosion research, Erosion, Zirconium alloys, Alloys, Corrosion.

Experimental work continued on hydrodynamics and corrosion. Activity on heat transfer was mainly devoted to the construction of a modified loop. Hydrodynamics experiments were performed on the following subjects: film thickness and pressure drop measurements in annular test elements at different pressures; film thickness and pressure drop measurements in circular test elements with nitrogen, in place of argon, at different pressures. Two test sections of different plastic materials were constructed for further experimental work. Design and construction of various components of a new loop (compressors, heat exchangers, etc.) are in progress. Corrosion tests are being performed in order to investigate the behaviour of Zircaloy-2 specimens after very long exposures. A program is planned for corrosion tests with a controlled hydrogen or/and oxygen content in the circulating water. Design and construction of a second identical corrosion loop are well advanced. (Author)

PRODUCTION OF MIXED UO_2 - ThO_2 OXIDE PELLETS BY SINTERING IN AIR. Quarterly rept. no. 1 on Contract 014-60-9RDF. 15 Dec 60, 24p.
Order from OTS or SLA $2.60 EURAEC-4

Trans. of rept. from Compagnie Industrielle des Combustibles Atomiques Frittés, Paris (France).

DESCRIPTORS: *Uranium compounds, *Thorium compounds, *Oxides, Pellets, Production, *Sintering, Air, Controlled atmospheres, Hydrogen, Tests.

A method for preparing crude pellets was elaborated and is described. Sintering in hydrogen (cracked ammonia) was the subject of many tests. The sintering process was found to be accelerated by a raising of the density in the rough and by the addition of certain salts, particularly carbonate of calcium. It was also found that the presence of UO_2 generally lowers the density after sintering. A start was made with sintering-in-air tests. (Author)

PRODUCTION OF MIXED UO_2 - ThO_2 PELLETS BY AIR SINTERING. Final rept. for 1 Sep 60-1 Sep 61, on Contract EUR/C/1356/60/f(33). 23 Oct 61, 37p. 7 refs.
Order from OTS or SLA $3.60 EURAEC-216

Trans. of rept. from Compagnie Industrielle des Combustibles Atomiques Frittés, Paris (France).

DESCRIPTORS: *Uranium compounds, *Thorium compounds, *Oxides, Production, *Sintering, Air, Controlled atmospheres, Hydrogen, Tests, Pellets.

Sintering, both in air and in cracked ammonia, yields high density (more than 96% of the theoretical value) mixed uranium and thorium oxides. Sintering in air at 1,600°C yields solid ThO_2-$UO_{2.3}$ solutions. Sintering in hydrogen yields solid ThO_2-$UO_{2.00}$ solutions. The successful outcome of the sintering is conditioned by the selection of the raw materials. The mixed precipitates of ThO_2-U_3O_8 yield remarkable results when sintering in hydrogen, the possible addition of CaO making it possible to reduce the temperature to 1,400°C. The mixture of UO_3 and of ThO_2 is the most suitable for air sintering. An essential condition for the success of the sintering operation is a good homogeneity of the initial mixture. An investigation was made of the influence of the shaping conditions on the density after sintering and on the structure. The influence of the content percentage of the various constituents: from 0 to 15% uranium oxide and from 0 to 0.4% CaO was also investigated. (Author) (See also 62-32040)

STEAM SINTERING OF URANIUM DIOXIDE. Quarterly rept. no. 1, 1 Sep-30 Nov 60, on Contract 016-60-0-RDF. [1962] 30p. 17 refs. Supersedes TID-12 449.
Order from OTS or SLA $3.60 EURAEC-2

Trans. of rept. from FIAT, S. A., Turin (Italy) 31 Dec 60.

DESCRIPTORS: *Uranium compounds, *Dioxides, *Sintering, Steam, Controlled atmospheres, Economics, Fuel elements, Pellets.

Experiments in steam sintering at different temperatures and at different speeds will be undertaken. Efforts will be made to obtain statistics on the density by sintering only ten pellets at a time and by measuring the values and the variations in these different pellets which have been treated at the same time and in the same way. As well as density, hour-glassing will be taken into consideration as well as other properties such as, for example, thermal conductivity. Efforts will be made to obtain information on all the products and kinetics of the oxidization of Uranium Oxide in steam and in air, involving the use of a thermo-balance, of optical and electronic microscopes, of X Rays and of thermo-differential analysis. It is intended to remeasure the activation energy of the steam sintering of stoichiometric uranium dioxide, and possibly with the use of other moderately oxidizing gases (such as carbon anhydride for example) and to compare the results with those obtained with the use of non-stoichiometric dioxide (obtained from the oxidization of the dioxide or from a mixture of UO2 and U3O8) in an inert atmosphere. Construction of the experimental plant for steam sintering was initiated.

STEAM SINTERING OF URANIUM DIOXIDE. Quarterly rept. no. 3, 1 Apr-30 June 61, on Contract 016-60-9 RDI. [1962] 15p. 2 refs.
Order from OTS or SLA $1.60 EURAEC-113

Trans. of rept. from FIAT, S. A., Turin (Italy) 31 July 61.

DESCRIPTORS: *Uranium compounds, *Dioxides, *Sintering, Steam, Controlled atmospheres, Calorimetry, Oxidation-reduction reactions, Fuel elements.

The steam sintering apparatus was completed and checked. The occurrence of thermal shocks leading to ruptures in the combustion tube made some design changes necessary. A newly designed steam differential thermal analysis setup was put in operation to take care of the short-comings of the previous arrangement. Preliminary experiments are in progress. Heat treatment of UO_2/U_3O_8 mixtures was hindered by oxidation and reduction in the furnace. The mixtures are being re-prepared and treated with better care. (Author) (See also 62-32169)

STEAM SINTERING OF URANIUM DIOXIDE. Quarterly rept. no. 4, 1 July-30 Sep 61, on Contract 011-60-9 RDI. [1962] 18p.
Order from OTS or SLA $1.60 EURAEC-198

Trans. of rept. from FIAT, S. A., Turin (Italy) 31 Oct 61.

DESCRIPTORS: *Uranium compounds, *Dioxides, *Sintering, Steam, Controlled atmospheres Calorimetry, Pellets, Fuel elements.

Several steam sintering experiments were run successfully. Argon gas was used both as the steam carrier and the cooling atmosphere. Preliminary results indicate that, at 1350°C the densification is nearly completed after 1 hour of soaking for pellets having a green density of 5 gr/cm^3, but the fired density is comparatively low. The substitution of Nytrogen in place of Argon is being tried, even though the first results are not encouraging. UO_2/U_3O_8 mixtures have been prepared and heat treated satisfactorily. They are now being X-Rayed. Preliminary results on the radial distribtuion of density in pellets have been obtained. It is apparent that Hydrogen sintered pellets, at least if their overall density is not very high, present a density which is lower in the central part than in the outskirt. The same does not seem to hold true in the case of steam sintered pellets. (Author) (See also 62-32318)

SWAGING OF URANIUM DIOXIDE. Quarterly progress rept. no. 6, 1 Oct-31 Dec 61, on Contract 059-61-7 RDI. [1962] 15p.
Order from OTS or SLA $1.60 EURAEC-253

Trans. of rept. from FIAT, S. A., Turin (Italy) 31 Jan 62.

DESCRIPTORS: *Fuel rods, *Uranium compounds, Dioxides, *Forging, Annealing, Metal powders, Density, Gamma rays, Absorption.

A first series of 24 bars of reactor core length and 11 mm in diameter have been fabricated with the vibro-swaging process previously developed. The fused UO_2 cladded in stainless steel was vibrated to approx. 84% T. D. and swaged with 2 passes for a total reduction of area of 16%. Densities of 93 and 92.5% of theoretical have been obtained for tube wall thicknesses of 1.0 and 0.5 mm respectively. Reproducibility of density resulted better than 0.5% T. D. Preliminary data on uniformity of density along the rod length indicated also a satisfactory value (±0.5% T. D.). Rod elongation was limited to a maximum 11% with final active length of (126±1) cm for the 0.5-mm wall thickness. In swaging-annealing experiments, densities up to 80% of theoretical have been obtained with a mixture of fused and ceramic grade UO_2 (56 w/o of ceramic grade). Fragmentation of fused UO_2 during vibration and swaging and roughness of inner surface of cladding in contact with swaged UO_2 have been studied. (Author) (See also 62-32152)

SWAGING OF URANIUM OXIDE. Quarterly rept. no. 1, 1 May-31 July 60, on Contract 013-60-5-RDI. [1962] 28p. 28 refs. Supersedes TID-12 447.
Order from OTS or SLA $2.60 EURAEC-10

Trans. of rept. from FIAT, S. A., Turin (Italy) 31 Aug 60.

DESCRIPTORS: *Fuel rods, *Uranium compounds, Dioxides, *Forging, Dies, Thermal diffusion, Gamma rays, Absorption, Hardening.

A study is to be made of the effects of various parameters on the characteristics of swaged tubes of stainless steel or Zircaloy-2 compacted with UO_2 powder. After taking stock of the research work carried out earlier in the United States and Canada, and giving a brief account of the equipment and materials used for the investigation under way, the report describes the techniques evolved for the production of the test specimens required for the study of the swaging parameters, thermal conductivity and the gamma-ray absorption of swaged UO_2. It also describes the tests in progress and the working program to be implemented during the second quarter of the research cycle. Some preliminary tests have provided evidence that densities close to 93% of theoretical density can be reached without difficulty.

SWAGING OF URANIUM DIOXIDE. Quarterly rept. no. 2, 1 Aug-31 Oct 60, on Contract EUR/C/434/60 I. [1962] 45p. 2 refs. Supersedes TID-12 448.
Order from OTS or SLA $4.60 EURAEC-11

Trans. of rept. from FIAT, S. A., Turin (Italy) 30 Nov 60.

DESCRIPTORS: *Fuel rods, *Uranium compounds, Dioxides, *Forging, Dies, Grains (Metallurgy), Density, Gamma rays, Absorption, Thermal diffusion.

The investigation of the characteristics of fused UO_2 powder (Spencer swageable grade) was continued. Some "core-length" rods were fabricated; in the best specimen obtained, UO_2 density reached 89.6 ± 1% of theoretical density. An investigation of the methods of gamma ray absorption applied to the determination of the density of rods by a nondestructive process is being carried out according to schedule. Preliminary measurements of the thermal conductivity of swaged UO_2 have led to values much lower than those attributed to pellets of corresponding density. (Author) (See also 62-32018)

SWAGING OF URANIUM DIOXIDE. Quarterly rept. no. 3, 1 Nov 60-31 Mar 61, on Contract EUR/C/434/2/60 i. [1962] 26p. 1 ref.
Order from OTS or SLA $2.60 EURAEC-61

Trans. of rept. from FIAT, S. A., Turin (Italy) 30 Apr 61.

DESCRIPTORS: *Fuel rods, *Uranium compounds, Dioxides, *Forging, Dies, Metal powders, Thermal diffusion, Microstructure.

The metallographic study of the Spencer melted UO_2 made clear a second phase which is present in the UO_2 matrix. A series of microhardness measurements were carried out on the UO_2 matrix and on the second phase, which proved to have the hardness of metallic uranium. Analyses were made to characterize the "special dense" Mallinckrodt UO_2 powder. Zircaloy-2 core-length rods were fabricated, with a UO_2 density equivalent to (90 ± 1)% T. D. Thermal conductivity measurements were carried out on three samples of swaged UO_2 with different densities (90%, 85%, 78% T. D.) at temperatures ranging from 150 to 500°C. If the thermal conductivity values of swaged UO_2 are compared with the values for pellets of the same density (90% T. D.), it is found that the value for the swaged UO_2 is about 30% lower at 150°C. When the temperature is increased, the thermal conductivity of the swaged UO_2 diminishes less rapidly than that of the pellets, so that at 500°C, the latter becomes lower than the former by 20%. (Author) (See also 62-32031)

SWAGING OF URANIUM DIOXIDE. Quarterly rept. no. 5, 1 July-30 Sep 61, on Contract 059-61-7 RDI. [1962] 18p.
Order from OTS or SLA $1.60 EURAEC-193

Trans. of rept. from FIAT, S. A., Turin (Italy) 31 Oct 61.

DESCRIPTORS: *Fuel rods, *Uranium compounds, Dioxides, *Forging, Dies, Annealing, Metal powders, Thermal diffusion, Porosity, Density, Gamma rays, Absorption.

The pre-compaction and cold swaging study of reactor length rods was completed. A remarkable improvement in the pre-compaction apparatus efficiency was obtained: vibrated densities of over 86% T. D. were reached with fused UO_2 in a very inexpensive way. Cold swaged densities up to 92-93% T. D. are obtainable with only 2 passes, a reduction of fuel area of less than 20%, and a relatively low tube elongation value (approx. 10%). The research will now be centered on the study of the uniformity and reproducibility of swaged bars. An investigation on the use of ceramic grade UO_2 powder for swaging-annealing experiments was initiated. The swaged UO_2 testing development is in progress. The experimental setup for thermal conductivity measurement was modified in order to perform runs at temperatures higher than 500°C. A study of the open porosity of swaged UO_2 was initiated by means of the pressurized mercury technique. Fragmentation of fused UO_2 during swaging is also being studied. (Author) (See also 62-32159)

SWELLING OF URANIUM. Quarterly rept. no. 4 (July-Sep 61). Sep 61, 22p. 9 refs.
Order from OTS or SLA $2.60 EURAEC-186

Trans. of rept. from Centre d'Étude de l'Énergie Nucléaire Brussels (Belgium).

DESCRIPTORS: *Radiation effects, *Uranium, *Platinum, Foils, Annealing, Grains (Metallurgy), Electron microscopy.

TECHNICAL REPORT, PT. A. CAN-1 Quarterly Progress Rept. no. 6 for the Period 1 Jan-31 Mar 61. 15 Apr 61 [8]p. CISE Rept. R 37.
Order from OTS or SLA $1.10 EURAEC-97

Trans. of rept. from Centro Informazioni Studi Esperienze (Italy).

DESCRIPTORS: Power reactors, *Reactor coolants, Reactor cores, Steam, Water, Mixtures, Heat transfer, Corrosion research, Erosion, Gas flow, Fluid flow, Distribution, Stability.

Contents:
Introduction
Heat transfer
Flow distribution and stability
Corrosion and erosion.

URANIUM OXIDE EXTRUSION. Quarterly rept. no. 2 on proposal 37, Contract EUR/C/1323/3/59 f. 15 Mar 60, 22p. Supersedes TID-12483.
Order from OTS or SLA $2.60 EURAEC-13

Trans. of rept. from Compagnie Industrielle des Combustibles Atomiques Frittes, Paris (France).

DESCRIPTORS: *Fuel rods, *Uranium compounds, Oxides, *Extrusion, Plasticizers, Dies, Machining, Sintering, Grains (Metallurgy)

Natural Uranium Oxide cylindrical revolution rods were made, 16 to 18.5 mm in diameter, 180 to 260 mm long, 10 to 10.15 g/cm3 in density and 3/10 yield, by Rhodoviol extrusion of Uranium Oxide of average specific surface (7 to 8 m2/g). The influence of the type of bond, method of granulation, characteristics of the die, the surface layer of the crude rods and, finally, of the sintering conditions, on the densification, appearance and deformation of sintered rods, was studied. The extrusion of Uranium Oxide with Rhodoviol to which a wetting agent has been added, followed by sintering under load, enabled the making of sintered rods 260 mm long, with a yield not more than 6/10 mm, which would permit their subsequent rectification. (Author)

URANIUM OXIDE EXTRUSION. Quarterly rept. no. 4 for June-Sep 61, on Contract EUR/3081/60/f. Nov 61, 15p.
Order from OTS or SLA $1.60 EURAEC-195

Trans. of rept. from Compagnie Industrielle des Combustibles Atomiques Frittes, Paris (France).

DESCRIPTORS: *Fuel rods, *Uranium compounds, Oxides, *Extrusion, *Tragacanth, Bonding, Additives, Thermal stresses, Conductivity, Mechanical properties, Spectrographic analysis

The extruded rods obtained, when using an uranium oxide powder having a specific area of 8 sq m per g supplied by the C. E. A., had always a density of not less than 10.50 g per c. c. These values confirm the results obtained during the second quarter with a uranium oxide of the same (specific) area. These cylindrical rods, 10 to 15 mm in diameter and 100 to 150 mm in length or 5 mm diameter and 50 mm in length, were obtained by extrusion with gum tragacanth (in the presence of aluminum chloride), with tylosis or with urea under osistatic compression. The research on the application of additives in order to increase the density of the extruded rods was continued; the results obtained by compression are encouraging as densities of not less than 10.70 g per c. c. have been obtained. The transposition to extrusion is still outstanding. (Author) (See also 62-24591) (62-32038)

URANIUM OXIDE EXTRUSION. Quarterly rept. no. 5 (rept. no. 1) on proposal 37, Contract EUR/3081/60 f. 15 Dec 60, 14p. Supersedes TID-12175.
Order from OTS or SLA $1.60 EURAEC-52

Trans. of rept. from Compagnie Industrielle des Combustibles Atomique Frittés, Paris (France).

DESCRIPTORS: *Fuel rods, *Uranium compounds, Oxides, Extrusion, Additives, Sintering, Grains (Metallurgy) Dies, Molding, Thermal stresses, Moisture, Density

The object is to make cylindrical rods of uranium oxide 15 to 20 mm in diam and 150 to 200 mm long. The density must equal or exceed 95% of the theoretical (i. e., 10.4 g/cu cm) with dimensional tolerances of ±1% on the diam, and total impurities must remain less than 1,500 ppm of iron equivalent. To attain these results, different parameters will be studied concerning the raw materials, the preparation of the paste and the shaping. Sintering and rectification operations require only an industrial adaptation. A uranium oxide powder of average specific surface (6 to 7 sq m/g) was used to make extruded rods of 10.2 to 10.3 g/cu cm density by applying to these rods an isostatic pressing operation before sintering. By incorporating already sintered grains in a uranium oxide powder of the same specific surface extruded rods were made, the density of which after sintering remained practically identical to the density of rods containing no sintered grains. Additives (niobium oxide and titanium oxide) in the uranium oxide gave no result. (See also 62-32328)

URANIUM OXIDE EXTRUSION. Quarterly rept. no. 6 (rept. no. 2) for Jan-Mar 61, on proposal 37. 31 Mar 61, 22p.
Order from OTS or SLA $2.60 EURAEC-62

Trans. of rept. from Compagnie Industrielle des Combustibles Atomiques Frittes, Paris (France)

DESCRIPTORS: *Fuel rods, *Uranium compounds, Oxides, Extrusion, *Tragacanth, Bonding, Additives, Bentonite, Niobium compounds, Titanium compounds, Sintering, Dies, Molding, Pressure, Moisture, Lubricants, Thermal stresses, Conductivity

By using average specific surface uranium powder (6 to 7 m2/g) we have obtained extruded rods of 10.60 to 10.65 g/cm3. density, or 96 to 97% of the theoretical density. These 10 to 15 mm. diameter and 100 to 150 mm. long cylindrical rods have been obtained by uranium oxide extrusion with gum tragacanth in the presence of aluminium chloride with and without isostatic pressing. We have continued the study of the preparation and shaping of pastes and tried to deter-

mine the influence of parameters such as : bonds, additives, instruments for making the pastes homogeneous die section, method of pressing, etc... Physical and mechanical measurements have been taken (thermal shock, resistance to compression, etc.). (Author) (See also 62-32025)

Adorni, N., Casagrande, I. and others.
DESIGN AND ASSEMBLY OF A LOOP FOR EXPERIMENTS ON FLOW STABILITY AND DISTRIBUTION IN TWO-PHASE FLOW. Special rept. no. 3. Oct 60 [64]p. 6 refs. CISE Rept. R 26.
Order from OTS or SLA $6.60 EURAEC-43

Trans. of rept. from Centro Informazioni Studi Esperienze (Italy).

DESCRIPTORS: Power reactors, *Reactor coolants, Steam, Water, Mixtures, Gases, Liquids, *Gas flow, *Fluid flow, Stability, Distribution, Density, Viscosity, Surface tension, Design, Hydraulic research.

The use of a water-steam mixture as a coolant in a power reactor requires the knowledge of the instability phenomena which may occur in a two-phase flow (gas+ liquid), as well as of the velocity and volume fraction distribution of both phases. The flow pattern ("dispersed") will be investigated inside ducts simulating possible fuel element channels in order to determine which factors affect its stability and homogeneity. The region of the liquid film adhering to the wall of the duct, and the bulk region, in which liquid droplets are dispersed in the gas stream, are being investigated by means of different devices for determining the thickness and, possibly, the mean velocity of the liquid film, and the velocity and volume fraction distribution of both phases in the bulk. The influence of the duct geometry, as well as that of the main physical parameters (such as density, viscosity and surface tension) are studied through experiments with channels and fluids of different kinds.

Adorni, N., Bertoletti, S. and others.
RESULTS OF WET STEAM COOLING EXPERIMENTS: PRESSURE DROP, HEAT TRANSFER AND BURNOUT MEASUREMENTS IN ANNULAR TUBES WITH EXTERNAL HEATING. Special rept. no. 4. Dec 60 [88]p. CISE Rept. R 30.
Order from OTS or SLA $8.10 EURAEC-44

Trans. of rept. from Centro Informazioni Studi Esperienze (Italy).

DESCRIPTORS: Power reactors, *Reactor coolants, Steam, Water, Mixtures, Pressure, Reduction, *Heat transfer, Reactor cores, Fuel elements.

Akol'zin, P. A. and Korneeva, L. V.
INVESTIGATION OF THE STRESS CORROSION OF STEEL IN REGARD TO THE OPERATION OF THE STEAM GENERATORS OF ATOMIC POWER PLANTS. [1961] [21]p. NSF 62-35(2); JPRS: R-1879.
Order from OTS or SLA $2.60 62-23258

Trans. of mono. Izuchenie Korrozii pod Napryazheniem Stalei Primenitel'no k Rabote Parogeneratorov Atomnykh Elektrostantsii, Moscow, 1960, p. 1-23.

DESCRIPTORS: *Corrosion research, Stainless steel, Austenite, Welds, Fracture (Mechanics), Nuclear power plants, Generators.

Bassi, A., Brutto, E. and others.
RESULTS OF CORROSION AND EROSION EXPERIMENTS WITH STEAM-WATER SPRAY. Special rept. no. 8. July 61 [100]p. 62 refs. CISE Rept. R 40.
Order from OTS or SLA $8.60 EURAEC-151

Trans. of rept. from Centro Informazioni Studi Esperienze (Italy).

DESCRIPTORS: Power reactors, *Reactor coolants, Steam, Water, Mixtures, Corrosion research, Zirconium alloys, Alloys, Stainless steel, Corrosion, Tests.

This report is devoted to the enumeration of corrosion and erosion measurements for Zircaloy-2 and stainless steel tubes. An attempt is made to correlate the various parameters involved. (See also 62-24606)

Brutto, E., Cihi, J. and others.
DESIGN AND ASSEMBLY OF A LOOP FOR EXPERIMENTS ON CORROSION AND EROSION PROPERTIES OF FLOWING WET STEAM. Mar 61, declassified 21 Dec 61, 47p. CISE Rept. R 34.
Order from OTS or SLA $4.60 EURAEC-98

Trans. of rept. from Centro Informazioni Studi Esperienze (Italy).

DESCRIPTORS: Light water reactors, *Reactor coolants, Steam, Water, Mixtures, Corrosion research, Erosion, Measurement, Design, Construction, Tests.

The use of a medium and high quality steam-water mixture in dispersed flow as a reactor coolant is desired. The design and construction of the facility for carrying out corrosion-erosion measurements is described. (See also 62-24594)

Dolgov, V. V., Kozlov, V. Ya. and others.
EXPERIMENTAL UNIFLOW STEAM SUPERHEATING REACTOR INSTALLATION OF THE FIRST ATOMIC POWER PLANT. 12 Mar 62 [23]p. (4 figs. omitted) 4 refs. FTD-TT-61-340.
Order from OTS or SLA $2.60 62-24939

Unedited rough draft trans. of mono. Pryamotochnaya Paroperegrevetel'naya Eksperimental'naya Ustanovka Reaktora Pervoi Atomnoi Elektrostantsii, Moscow, 1961, 20p.

DESCRIPTORS: *Nuclear power plants, Power reactors, Steam, Water, Mixtures, Reactor coolants, Fuel elements, Fluid flow, Experimental data.

An experimental straight-through (uniflow) steam-superheating reactor is described. The practical

possibility was confirmed of operating a uniflow installation under conditions of nuclear superheating of steam. The method consists in gradual replacement of water by steam in the superheating channel. No switch-over or changes are required in the performance of the circuit equipment. During emergency shutdowns of the reactor the cooling of fuel elements in the steam superheating channel is entirely reliable, as evidenced by the continuous temperature drop along the element walls. In the course of long-lasting operation of the steam superheating channel under steady state conditions (over 1000 hours) and under transient conditions (more than 50 change-overs to superheating) no defects were noted in the channel performance; i. e., the high stability and reliability of the First APP fuel elements were confirmed. It was further shown that these elements can be used effectively in the steam superheating mode of operation. Superheating was carried out directly in the reactor under a pressure of 85 kg/cm^2 at 360°C. A maximum superheating temperature of 370°C was reached.

Kazachkovskii, O. D. and Lytkin, V. B.
THE ROLE OF PLUTONIUM IN THE DEVELOPMENT OF NUCLEAR POWER ENGINEERING. 27 Aug 62 [14]p. JPRS: 14976.
Order from OTS or SLA $1.60 62-32543

Trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 6, p. 41-49.

DESCRIPTORS: *Atomic energy engineering, Nuclear energy, Fission, *Plutonium, *Reactor fuels, Economics.

Pasechnik, I. P.
SCIENCE HAS PROVED THAT NUCLEAR EXPLOSIONS CAN BE DETECTED NO MATTER WHERE THEY ARE SET OFF. 13 Aug 62, 2p. AID rept. 62-117.
Order from OTS or SLA $1.10 62-33103

Abstract trans. of Priroda (USSR) 1962 [v. 51] no. 7, p. 3-12.
A complete trans. is available from OTS or SLA $1.60 as 62-32873, JPRS-15086, 31 Aug 62 [20]p.

DESCRIPTORS: *Nuclear explosions, *Detection, Radioactive fall-out, Seismic waves, Radio signals.

Pavlov, M.
NUCLEAR EXPLOSIVE MATERIALS. 24 Apr 62 [5]p. JPRS: 13611.
Order from OTS or SLA $1.10 62-24390

Trans. of Voennye Znaniya (USSR) 1961 [v. 37] no. 6, p. 24.

DESCRIPTORS: Uranium, Plutonium, Nuclear reactions, Chain reactions, *Thermonuclear reactions, *Nuclear explosions, *Nuclear weapons.

Seredin, P. I.
FORGING URANIUM. 16 Mar 62 [11]p. (6 figs. omitted) 8 refs. JPRS: 13099.
Order from OTS or SLA $1.60 62-23602

Trans. of Kuznechno-Shtampovochnoe Proizvodstvo (USSR) 1961 [v. 3] no. 1, p. 14-18.

DESCRIPTORS: *Uranium, Forging, Production, *Reactor fuels, Processing, Metal-forming presses.

Radioactivity

Andreeva, E. A.
RADIACTIVIDAD NATURAL DE SUELOS Y DETERMINACION DEL CONTENIDO TOTAL DE POTASIO POR EL METODO RADIACTIVO (Estestvennaya Radioaktivnost' Pochv i Opredelenie Valovogo Kaliya Radiometricheskim Metodom) (Natural Radioactivity of Soils and Determination of Total Potassium Content by Radioactive Methods). 17p. 16 refs. CID: 62-75. (text in Spanish).
Order from OTS or ETC $1.30 62-26275

Trans. of #Pochvovedenie (USSR) 1960, no. 5, p. 21-29
Another trans. is available in English from OTS or SLA $1.60 as 62-25138, NIH-5-17-62, 17 May 62 [13]p.

DESCRIPTORS: *Natural radioactivity, *Soils, Determination, Potassium, Radioactive analysis.

Belyaev, L. I., Gedeonov, L. I. and others.
INTENSIVE RADIOACTIVE FALLOUT IN SIMEIZ (CRIMEA) AS A RESULT OF THE NUCLEAR EXPLOSION IN THE SAHARA ON 13 FEB 60. 22 Aug 62, 2p. AID rept. 62-124.
Order from OTS or SLA $1.10 62-33102

Abstract trans. of mono. Intensivnoe Radioaktivnoe Vypadenie v Simeize (Krym) v Rezul'tate Yadernogo Vzryva v Sakhare 13 Fevralya 1960 G, Moscow, 1961, 39p.

DESCRIPTORS: *Nuclear explosions, *Radioactive fall-out, Detection, Measurement, Atmosphere, Precipitation, Radioactivity.

Synoptic meteorological analysis indicated that air masses which had prevailed over the French test site began to pass over the Crimea on about the 16th of February. Maximum values of radioactivity began to be recorded from the 20th of February. The results of measurements showed that unusually high levels of contamination occurred, though a rapid fall-off of the radioactivity of the sample collected was also noted. It is assumed that the external irradiation dose from the fallout products was not high. The rapidity with which the radioactive material from but a single nuclear detonation of moderate size made its appearance over the Crimea is also noted. The obser-

vations supported data of other investigations dealing with the rate of decrease in radioactivity of explosion products. The relatively quick rate at which the troposphere purifies itself is held responsible for the decrease in the concentration of radioactive products in the air.

Glubrecht, H.
INDICATOR ACTIVATION METHODS (Die Indikator-Aktivierungsmethode). [1962] [13]p. (5 figs. omitted) 5 refs.
Order from SLA $1.60 62-16555

Trans. of Atompraxis (West Germany) 1961, v. 7, no. 12, p. 467-470.

DESCRIPTORS: *Radioactive isotopes, *Labeled substances, Detection, Radioactivation analysis, Research reactors, Sampling, Decay, Thermal neutrons.

PHYSICS

JOURNAL OF ENGINEERING PHYSICS, 1961, VOL. 4, NO. 10: SELECTED ARTICLES. 24 Apr 62 [35]p. (7 refs. omitted) 24 refs. FTD-TT-62-84.
Order from OTS or SLA $3.60 62-24353

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 10, p. 9-14, 21-29, 97-100.

DESCRIPTORS: *Gases, Pressure, *Viscosity, Determination, *Cylindrical bodies, Cooling, Heating, *Heat transfer, Fluid mechanics, Aerodynamics, Solids, *Explosive gases, Air, Hydrogen, Mixtures, *Ignition, Probability, Metal, *Electrodes, Sparks, Electric discharges.

Contents:
Calculation of the viscosity of compressed gases by the similarity method, by G. P. Filippova and I. P. Ishkin
The effect of non-stationary heat on the heat transfer coefficient in case of external stream-lining of solids, by L. I. Kudryashev and A. A. Smirnov
The effect of the material of the electrodes on ignition of explosive gas mixtures by a spark discharge by V. A. Koloty and D. S. Gerchikov.

Balon, Z. P. and Maksimova, M. P.
NATIONAL ROENTGENOMETRIC STANDARD INSTALLATIONS AND THEIR COLLATION (Etalonnye Natsionalnye Rentgenometricheskie Ustanovki i Slicheniya Ikh). [1962] 18p. 16 refs.
Order from OTS or SLA $1.60 62-23692

Trans. of Komitet Standartov, Mer i Izmeritel'nykh Priborov. Trudy Institutov Komiteta (USSR) 1961, no. 55(115) p. 42-54.

DESCRIPTORS: *X-ray laboratories, Test equipment, *Radiation instruments, Standardization.

This article presents an outline of standard roentgenometric installations in a number of countries (the USSR, the United States, Great Britain, Sweden, France and others), also the results of collation. (Author)

Gogoberidze, D. B.
THEORY OF THE PENDULUM METHOD FOR MEASURING HARDNESS (K Teorii Mayatnikovogo Metoda Izmereniya Tverdosti). [1962] [14]p. (foreign text included) 17 refs.
Order from OTS or SLA $1.60 62-14559

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1952, v. 26, no. 2, p. 310-314.

DESCRIPTORS: *Hardness, Measurement, Theory, Test equipment, *Instrumentation.

It is shown that the values of hardness, as measured according to P. A. Rebinder and V. D. Kuznetsov, are not constant for a given material, but do change depending on the criterion that is applied for the estimate of hardness as well as on the weight of pendulum and the shape of its supports. Hardness, according to V. D. Kuznetsov, and hardness, according to P. A. Rebinder, is not a quantity (value) which depends only on the substance which is studied, but it undergoes great changes depending on the conditions of measurement. (Author)

Hajos, Gyorgy.
THE REPORT OF THE MATHEMATICAL AND PHYSICAL SCIENCES DEPARTMENT OF THE HUNGARIAN ACADEMY OF SCIENCES, 1960. 7 Feb 62 [32]p. JPRS: 12378.
Order from OTS or SLA $3.60 62-15944

Partial trans. (some parts summarized) of Magyar Tudomanyos Akademia Matematikai es Fizikai Tudomanyok Osztalyanak Kozlemenyei (Hungary) 1961, v. 11, no. 3, p. 229-247.

DESCRIPTORS: *Scientific research, *Mathematics, *Physics, Astronomy, Hungary.

Yantovskii, E. I.
EQUATIONS OF A M. H. D. a. c. GENERATOR WITH ROTATING MAGNETIC FIELD. [1962] [14]p. 14 refs. C. E. Trans. 2542; [DSIR] NLL M. 6373.
Order from OTS or SLA $1.60 62-32803

Trans. of Akad[emiya] Nauk SSSR. Otd[elenie] Tekh[nicheskikh] Nauk. Izv[estiya]. Energ[etika] i Avtom[atika] (USSR) 1961, no. 6, p. 142-151. Another trans. is available from OTS or SLA $2.60 as 62-24936, FTD-TT-62-90.

DESCRIPTORS: *Magnetohydrodynamics, Alternating current, *Generators, Electromagnetic fields, Rotation, *Electrical equipment, Electric motors, Turbines, *Gas turbine rotors, Hydrodynamics, Equations, Motion, Partial differential equations.

Blokhintsev, D. I.
THEORY OF MOVING GENERATORS AND RECEIVERS OF SOUND, tr. by B. W. Kuvshinoff. 10 Aug 62, 18p. 4 refs. APL/JHU TG 230-T320.
Order from OTS $0.50 62-11774

Trans. of Moscow U. Uchenye Zapiski (USSR) 1949, no. 134, p. 134-145.

DESCRIPTORS: Acoustics, *Sound generators, Sound transmission, *Supersonics, Shock waves, Theory

Lyamshev, L. M.
SOUND DIFFRACTION BY THIN BOUNDED PLATES IN A LIQUID [Diffraktsiya Zvuka na Tonkoi Organichennoi Plastinke v Zhidkosti]. [1961] 7p. 7 refs.
Order from OTS $0.50 62-11298

Trans. of Akusticheskii Zhurnal (USSR) 1955, v. 1, no. 2, p. 138-143.

DESCRIPTORS: *Sound, *Diffraction, Liquids, Sheets, Acoustics.

The problem is analyzed of the sound diffraction by a thin bounded plate in a liquid taking into account the longitudinal and bending oscillations of the plate. It is shown that for certain angles of sound wave incidence, there is observed sound passage through the plate and also strong scattering in a direction opposite to the incident wave direction, the so-called nonspecular reflection. (Author)

Rode, Johannes and Harder, Hermann.
ARRANGEMENT FOR DISTORTION-FREE SPEECH TRANSMISSION BY MEANS OF UNDERWATER SOUND WAVES, tr. by J. R-P. 14 Aug 62, 4p. (figs. omitted).
Order from OTS or SLA $1.10 62-32916

Trans. of German patent 724,204, cl. 74d, gr. 6/08, by Electroacustic GmbH, pat from 12 Oct 37, grant announced 9 July 42, pub. 20 Aug 42.

DESCRIPTORS: *Speech transmission, *Underwater sound, Underwater sound transmission, Underwater sound equipment, Sound, Speech, Rectifiers.

All the means serving for rectification in the receiving amplifier are arranged ahead of the rectifier tube. The means for rectification consists advantageously of close coupled band filters.

Dehler, H.
EFFICIENCY AND ECONOMY OF PRESSED MAGNETS WITH PLASTIC BINDERS. [1962] [9]p. 6 refs.
Order from SLA $1.10 62-16678

Trans. of [ETZ]Electrotechnische Zeitschrift. [Ausgabe A. Zentralblatt für Electrotechnik] (Germany) 1944, v. 65, no. 11/12, p. 93-95. Another trans. is available from SLA mi$1.80, ph$1.80 as 59-15128, 18 Dec 44 [7]p.

DESCRIPTORS: *Magnetic materials, *Magnets, Materials, Binders, Plastics, *Powder metallurgy.

The improvement of the "Shape Efficiency" is shown by some examples, and the efficiency of the material is determined. The economy of the pressing process as well as some characteristics are likewise illustrated. (Author)

Dolginov, Sh. Sh., Eroshenko, E. G. and others.
MAGNETIC MEASUREMENTS BY THE VENUS PROBE, tr. by B. W. Kuvshinoff. 4 Sep 62, 4p. 2 refs. APL/JHU TG 230-T328.
Order from OTS $0.50 62-11781

Trans. from Geomagnetizm i Aeronomiya (USSR) 1962, v. 2, no. 1.

DESCRIPTORS: *Venus, *Magnetic fields, Measurement, *Magnetometers, Terrestrial magnetism, Magnetism, Planets, Satellite vehicle research.

A three-component magnetometer, for measuring the magnetic field variations near the planet, and a magnetic variometer, for measuring the field en route, were carried by the Venus probe on 12 February 1961. The telemetered transmission of the 17th at 1.9 million km from earth indicate that the geomagnetic disturbances during the probe measurements were caused not by the inherent magnetic field of the stream, but by direct interaction of the corpuscular stream and the geomagnetic field. From the comparison of the experimental data on earth and those of the probe we conclude that there was no correlation between the disturbance of the magnetic field on earth and the disturbance of the magnetic field in space.

Fahlenbrach, H. and Sixtus, K.
INVESTIGATIONS OF VARIOUS NON-MAGNETIC STATES. [1962] 12p. (refs. figs. tables omitted).
Order from SLA $1.60 62-16992

Trans. of Zeitschrift für Metallkunde (West Germany) 1949, v. 40, no. 5, p. 187-193.

DESCRIPTORS: *Ferromagnetic materials, Iron alloys, Nickel alloys, Silicon alloys, Aluminum alloys, Alloys, Nickel, *Magnetism, Permeability, Phase transitions, Wire, Resistance, Vibration, Single crystals, Magnetic materials.

Golubtsov, I.
OXIFER, MATERIAL MAGNETICO (Oksifery) (Oxifer, a Magnetic Material). 7p. CID: 62-95. (text in Spanish).
Order from OTS or ETC $0.90 62-26295

Trans. of Radio [Moscow] (USSR) 1956, no. 5, p. 16.

DESCRIPTORS: *Ferromagnetic materials.

Hofbauer, Th. and Koch, K. M.
ON THE MECHANISM OF THE MAGNETIZATION DISCONTINUITIES. Preliminary Communication. [1962] 5p. (refs. figs. omitted).
Order from SLA $1.10 62-16966

Trans. of Zeits[chrift] f[ür] Physik (West Germany) 1951, v. 130, no. 4, p. 409-414.

DESCRIPTORS: Iron, Nickel, Wire, Magnetic fields, Magnetic effects, Torque, Deformation, Electric wire, *Magnetism.

It was found that in specimens with preferred direction of magnetization an auxiliary field at rather high frequency promotes both the release and the course of the magnetization discontinuities thus causing - with given values of the main field - an increase in value of the saturation magnetization and of the remanence. (Author)

Rudnyi, N. M., Wekhsler, A. S. and Bulanova, A. I.
MESSUNG DER VERLUSTE IN MAGNETISCHEN WERKSTOFFEN, DIE GLEICHZEITIG DURCH FELDER MIT VERSCHIEDENER FREQUENZ MAGNETISIERT WERDEN. (Measurement of the Losses in Magnetic Materials which are Simultanuously Magnetized by Magnetic Fields with Different Frequency). 8p. (text in German).
Order from T.I.B. $1.55

Trans. of Elektrichestvo (USSR) 1961, no. 1, p. 48-51

DESCRIPTORS: Measurement, *Magnetic alloys, Magnetic fields.

Sarychev, V. M.
MOTION OF PLASMA THROUGH A PIPE PLACED IN EXTERIOR CROSSED ELECTRIC AND MAGNETIC FIELDS. Jan 62, 5p. 5 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Zhur[nal] Prikl[adnoi] Mekh[aniki] i Tekh[nicheskoi] Fiz[iki] (USSR) 1961, no. 1, p. 3-[9].
An unedited rough draft trans. is available from OTS or SLA $1.60 as 62-19279, FTD-TT-62-43, 18 Jan 62 [13]p.

DESCRIPTORS: *Plasma physics, *Magnetohydrodynamics, Continuum mechanics, Equations, Motion, Magnetic fields, Electric fields.

Vorob'ev, A. A., Vorob'ev, G. A., and Mel'nikov, M. A.
THE FORMATION OF A DISCHARGE IN SOLID DIELECTRICS. 9 Apr 62 [8]p. 4 refs. FTD-TT-62-109.
Order from OTS or SLA $1.10 62-25406

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Energetika (USSR) 1959 [v. 2] no. 4, p. 35-37.

DESCRIPTORS: Solids, *Dielectrics, Electric discharges, Voltage, Electrical conductance, Crystals, Alkali metals, Halides, Mica, Polymers, Gas discharges, Ionization

Experimental and calculated data suggest that in crystals of simple structure the free path of an electron can be considerably greater than in polymers or in mica. This is apparently due to the lower electrical strength of rock salt in comparison with that of polymers. There are fewer acts of ionization per unit path length in ionic crystals and the "linear ionization density" will be small. Therefore, in order to create a channel with high electrical conductivity, many avalanches are required. In solids of complex structure it is harder for the electron to accelerate, the linear ionization density will be greater and a smaller number of avalanches is required to create a channel with high electrical conductivity. Therefore the discharge formation time in polymers and mica is less then it would be in crystals of alkali metal halides. In crystals of alkali metal halides the discharge formation time increases when the lattice constant increases. An analogous example exists in the case of gases.

Electronics

Basov, N. G. and Prokhorov, A. M.
THEORY OF THE MOLECULAR GENERATOR AND MOLECULAR POWER AMPLIFIER. 28 Aug 62 [10]p. 4 refs. [USASIA] Trans. Log no. 1029.
Order from OTS or SLA $1.10 62-32904

Trans. of #Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1956, v. 30, no. 3, p. 560-563.

DESCRIPTORS: Molecules, Molecular beams, *Generators, *Microwave amplifiers, *Power amplifiers, Amplifiers, Operation, Theory.

Based on the dispersion theory, taking into account the saturation effect, a theory is propounded on the operation of a molecular generator and microwave molecular power amplifier. Formulas are derived for the condition of autoexcitation of the generator for the steady-state oscillation generation and amplitude frequency. The question of the amplification factor of the molecular power amplifier, amplifier transmission band and mode of operation of the amplifier in the linear area is examined. (Author)

Fyalko, E. I.
ON THE DEPENDENCE OF THE HOURLY NUMBER OF DETECTED METEORS ON THE RADAR WAVELENGTH. [1962] [6]p. 13 refs. USASIA Trans. Log no. 1178.
Order from OTS or SLA $1.10 62-32654

Trans. of #Radiotekhnika (USSR) 1960, v. 15, no. 12, p. 10-12.

DESCRIPTORS: *Meteors, Detection, *Radar signals, Wave characteristics, Mathematical analysis.

A study was made of the possibility of approximating the relation of the number of meteors detected to radar wavelength by the parabola $N \sim \lambda^n$. The exponent n depends essentially on the radar "count-time", T_{min}. In the case $T_{min} \approx 0.035$ sec (which applies to type TPI radars) cubic and linear approximations are possible. (Author)

Khokhlov, R. V.
ON THE THEORY OF LOCKING WITH A SMALL AMPLITUDE EXTERNAL FORCE [K Teorii Zakhvatyvaniya pri Maloi Amplitude Vneshnei Sily]. [1961] [10]p. 4 refs.
Order from OTS or SLA $1.10 62-10161

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 97, no. 3, p. 411-414.
Another trans. is available from OTS $0.50 as 62-11308, MDF K-176 [1959]

DESCRIPTORS: Mathematical analysis, *Nonlinear systems, *Electronic equipment, Electronic circuits, Electron tubes, Electric fields, Harmonic oscillators, Capacitors, Generators, Synchronizers, Feedback, Amplifiers, Amplitude modulation, Theory, Nonlinear differential equations.

For abstract see Technical Translations 8: 181-182, 1962.

Kononov, B. P. and Sarksyan, K. A.
A PLASMA SOURCE FOR A HIGH VACUUM. 5 Feb 62 [9]p. 9 refs. FTD-TT-61-400; AD-271 828.
Order from OTS or SLA $1.10 62-23373

Unedited rough draft trans. of #Zhurnal Tekhnicheskoi Fiziki (USSR) 1961, v. 31, no. 11, p. 1294-1297

DESCRIPTORS: *Plasma physics, Laboratory equipment, *Electron beams, Gas discharges, *Vacuum systems, Manometers, Anodes, Electrodes, Cathode ray tubes, Oscillographs, *Pressure, Velocity, Voltage.

A description is given of an experimental apparatus for producing plasma by means of the mixing of electron and ion beams in a vacuum system with a pressure drop. A plasma was produced which had a density of 10^{12} to 10^{13} cm^{-3} in a vessel evacuated to a pressure of 2×10^{-5} mm Hg. (Author)

Ovcharov, V. T.
AXIAL-SYMMETRICAL ELECTRON BEAMS OF ASSIGNED FORM [Aksyal'no-Simmetrichnye Elektronnye Puchki Zadennoi Formy]. [1962] [7]p. 1 ref. [USASIA] Trans. Log no. 1066.
Order from OTS or SLA $1.10 62-32639

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 107, no. 1, p. 47-50.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 59-22597, RTS-1228, Oct 59 [9]p.

DESCRIPTORS: *Electron beams, Axially symmetric flow, Production.

For abstract see Technical Translations 3: 387, 1960.

Schuetze, W. and Bernhard, F.
A NEW METHOD FOR MEASURING EXTREMELY SMALL ION CURRENTS IN HIGH VACUUM. [1962] 5p. (figs. refs. omitted).
Order from SLA $1.10 62-16308

Trans. of Zeitschrift für Physik (West Germany) 1956, v. 145 [no. 1] p. 44-47.

DESCRIPTORS: *Mass spectrometers, *Scintillation counters, *Ionic current, Measurement, Vacuum systems.

Molecular Physics and Spectroscopy

Kamimura, Hiroshi.
JAHN-TELLER EFFECT. [1962] 26p. 15 refs.
Order from SLA $2.60 62-14812

Trans. of Nihon Butsuri Gakkaishi (Japan) 1961, v. 16, no. 7, p. 436-446.

DESCRIPTORS: *Molecular structure, *Atomic structure, Electron mass, Atomic orbitals, *Deformation, Fission, *Atomic energy levels, Kinetic theory.

Lyubimov, N. P. and Khokhlov, R. V.
ON THE POLARIZATION OF A MOLECULAR BEAM BY AN ALTERNATING FIELD WITH VARYING AMPLITUDE AND PHASE. [1962] 8p. 4 refs. MDF L-118.
Order from OTS $0.50 62-11294

Trans. of #Zh[urnal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1957, v. 33, no. 6(12), p. 1396-1402.

DESCRIPTORS: *Molecular beams, *Polarization, Electric fields, Electrical effects, Amplitude modulation, Phase modulation, Frequency.

This paper is devoted to the derivation of equations which describe the behavior of the polarization of a

molecular beam under the action of an alternating field with varying amplitude and frequency and also to the solution of these equations for different cases. An exact solution, when the effective field with the varying amplitude has the frequency of the molecular transition, and approximate solutions in the cases of the field amplitude and frequency varying rapidly and slowly during the transit time through the cavity are found. (Author)

Samoilov, O. Ya.
ON THE VIBRATION FREQUENCY OF WATER MOLECULES IN THE FIRST ION COORDINATION LAYER IN AQUEOUS SOLUTIONS. [1962] 6p. 6 refs.
Order from OTS or SLA $1.10 62-14447

Trans. of Zhurnal Strukturnoi Khimii (USSR) 1960, v. 1, no. 1, p. 36-38.

DESCRIPTORS: *Water, *Molecules, Vibration, Frequency, Ions, Solutions, Surface properties, Electrolytes.

The relationship of the vibration frequencies of water molecules in equilibrium states nearest to the ions in aqueous electrolyte solutions to magnitudes ΔE_i is investigated. The vibration frequencies and, consequently, magnitudes j_{oi} increase with increasing ΔE_i. (Author)

Yaroslavskii, N. G. and Stanevich, A. R.
ROTATIONAL SPECTRUM OF H_2O IN THE 50-1500 μ (200 - 7 cm^{-1}) LONGWAVE INFRARED BAND. [1960] 9p. 16 refs. MDF I-124.
Order from OTS $0.50 62-11391

Trans. of Optika i Spektro[skopiya] (USSR) 1958, v. 5, no. 4, p. 384-392.

DESCRIPTORS: Water, *Water vapor, Molecular rotation, *Absorption spectra, Infrared spectroscopy, Molecular spectroscopy.

About 100 absorption bands of the rotational spectrum of water vapor in the 50 to 1500 μ range were recorded in the DIKS-1 vacuum recording longwave spectrometer by using a new optico-acoustic radiation detector and a set of echelettes with constants from 0.0833 to 2.5 mm, with maximum resolution of 0.2 - 0.3 cm^{-1} accuracy of determination of the wave number 0.02 cm^{-1} and of intensity 5-10%. About 34 of these bands were observed for the first time. A complete interpretation is given of the rotational spectrum of H_2O and it is shown that the experimental values of the band wave numbers found agree with their computed values within the limits of measurement error. (Author)

Optics

Büttner, Hubert.
NEW ATTACHMENTS FOR THE UR 10 INFRARED SPECTROPHOTOMETER. 25 July 61 [15]p. JPRS: 9676.
Order from OTS or SLA $1.60 62-24550

Trans. of Chemische Technik (East Germany) 1961, v. 13, no. 4, p. 233-236.

DESCRIPTORS: *Infrared spectrophotometers, Spectrophotometers, Chemical industry, *Infrared equipment.

Deprieck, M.
APPARATUS FOR LUMINOUS SIGNALING BY REFLECTION, CATAPHOTE TYPE. [1954] 1p.
Order from OTS or SLA $1.10 62-16384

Trans. of French patent 762,064, gr. 12, cl. 2, appl. 20 Dec 32, released 18 Jan 34, pub. 3 Apr 34.

DESCRIPTORS: Signals, Light, Reflection, *Reflectors, Design, Luminescence.

Deumlich, F.
NEW DEVELOPMENTS IN OPTICAL THEODOLITES. 25 July 61 [14]p. (3 figs. omitted). JPRS: 8625.
Order from OTS or SLA $1.60 62-24553

Trans. of Vermessungstechnik (East Germany) 1961, v. 9, no. 2, p. 47-50.

DESCRIPTORS: *Optical instruments, *Theodolites, Design, Operation.

Engelhardt, H.
PROCESSES AND LIMITS OF NEW PHYSICAL METHODS OF GAS ANALYSIS, I. July 62.
Order from BISI $1.10 BISI-2713

Trans. of Verein Deutscher Ingenieure. Zeitschrift (West Germany) 1961, v. 103, 1 Oct, p. 1393-1404.

DESCRIPTORS: *Infrared gas analyzers, *Waste gases, Test methods.

Myukhkyurya, V. I.
UNIVERSAL ELECTROPHOTOMETER. 5 June 62 [28]p. JPRS: 13998.
Order from OTS or SLA $2.60 62-24970

Trans. of Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy (USSR) 1959, no. 93[155] p. 70-80.

DESCRIPTORS: *Electrophotography, *Photometers, *Light, *Propagation, Reflection, Instrumentation.

Abrikosov, A. A.
THE INFLUENCE OF SIZE ON THE CRITICAL FIELD OF SUPERCONDUCTORS OF THE SECOND GROUP [Vliyani Razmerov na Kriticheskoe Pole Sverkhprovodnikov Vtoroi Gruppy]. [1962] 9p. 2 refs.
Order from OTS or SLA $1.10 62-14455

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 86, no. 3, p. 489-492.
Other trans. are available from OTS or SLA $1.10 as 61-15697, Nov 60 [7]p. and from SLA as RT-834.

DESCRIPTORS: *Thin films, *Superconductors, Superconductivity, Electromagnetic fields, Mathematical analysis.

Abdullaev, G. B., Akhundov, G. A. and Aliev, M. G.
ÜBER DEN MECHANISMUS DES STARKFELDEFFEKTES IN p-n-UBERGANGEN (On the Mechanism of the Strong Field Effect in p-n-transitions). (text in German).
Order from T. I. B. $1.55

Trans. of Akademiya Nauk Azerbaidzhanskoi SSR [Baku]. Doklady, 1956, v. 12, no. 11, p. 787-791.

DESCRIPTORS: *Mechanisms, *Transition elements.

Alekseevskii, N. E. and Gaidukov, Yu. P.
FERMI SURFACE OF LEAD. [1962] 17p. 10 refs.
Order from OTS or SLA $1.60 62-14384

Trans. of #Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1961, v. 41, no. 2, p. 354-362.

DESCRIPTORS: *Lead, *Single crystals, Metallic crystals, Surfaces, Magnetic properties, Magnetic fields, Crystal structure.

The galvanomagnetic properties of lead monocrystals permitted the Fermi surface to be established. It was found to consist of a double level: one part of the Fermi surface is an open surface of the "fluted cylinder lattice" type, with the cylinder axis parallel to the [111] crystallographic axis; the other part is a closed surface. The volumes enclosed by the open and the closed surfaces are equal but have opposite signs (the closed surface corresponds to "hole" conductivity). The Fermi surface of lead is compared with the experimental data concerning the de Haas-Van Alphen effect which is known from literature. (Author)

Alferov, Zh. I., Gordeev, G. V. and Stafeev, V. I.
TEMPERATURABHANGIGKEIT DER DURCHSCHLAGSPANNUNG IN GERMANIUM - UND SILIZIUMDIODEN (Temperature Dependence of the Breakdown in Germanium and Silicon-diodes). (text in German).
Order from T. I. B. $1.55

Trans. of mono. Fizika Tverdogo Tela: Sbornik Statei, v. 2 [Moscow] 1959, p. 104-108.

DESCRIPTORS: Sensitivity, *Germanium, *Silicon, *Diodes.

Arifov, U. A., Ayukhanov, A. Kh. and others.
THE NATURE OF THE SECONDARY EMISSION OCCURING ON THE BOMBARDMENT WITH ALKALI-METAL IONS OF FILMS BY THE SURFACE OF A METAL. 9 Aug 62 [20]p. 20 refs. FTD-TT-62-921.
Order from OTS or SLA $1.60 62-32681

Unedited rough draft trans. of Akademiya Nauk Uzbekskoi SSR [Tashkent]. Izvestiya. Seriya Fiziko-Matematicheskikh [Nauk] 1961, no. 6, p. 34-39 and 50-56.

DESCRIPTORS: *Thin films, *Alkali metals, Tantalum, Tungsten, Ions, *Secondary emission, Scattering, Metals, Surface properties.

In the composition of secondary negative emission appearing on the bombardment, with ions, of W and Ta surfaces covered with thin films of alkali metals, there are a great many negative ions. The presence of negative ions in the composition of secondary negative emission is explained by the sputtering of gases adsorbed on the bombarded surface in the form of negative ions due to a decrease in work function of the surface by alkali-metal films. The disadvantages are shown of the methods of measuring the kinetic emission of the electrons and the sources of error of previous investigators. A qualitative theoretical examination is presented of the scattering of atomic particles by the surface of a solid, which allows the observed laws to be explained.

Bass, F. G. and Tsidil'kovskii, I. M.
ON THE THEORY OF THE HALL AND NERNST-ETTINGHAUSEN EFFECTS IN MIXED-CONDUCTION SEMICONDUCTORS. [1962] 21p. 5 refs.
Order from OTS or SLA $2.60 62-14472

Trans. of #Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1955, v. 28, no. 3, p. 312-320.

DESCRIPTORS: *Semiconductors, Hall effect, Electrons, Magnetic fields, Impurities, Theory.

The Hall and Nernst-Ettinghausen electromotive forces and the distribution of carrier concentrations are calculated for a mixed-conduction semiconductor in a nonuniform magnetic field. Taken into account are the presence of impurity levels and carrier recombination. (Author)

Chuenkov, V. A.
DIE THEORIE DES ELEKTRISCHEN DURCHSCHLAGS DER HALBLEITER. I. (The Theory of the Electric Breakdown of Semiconductors). (text in German).
Order from T. I. B. $1.85

Trans. from mono. Fizika Tverdogo Tela: Sbornik Statei, v. 2 [Moscow, 1959].

DESCRIPTORS: Theory, *Semiconductors.

Chuenkov, V. A.
THEORIE DES ELEKTRISCHEN DURCHSCHLAGS DER HALBLEITER (p-n-ÜBERGANGE). II. (Theory of the Electric Breakdown of Semiconductors of p-n-transitions). (text in German).
Order from T. I. B. $1.85

Trans. of mono. Fizika Tverdogo Tela: Sbornik Statei, v. 2 [Moscow] 1959, p. 209-214.

DESCRIPTORS: Theory, *Semiconductors, Transistors.

Kachinskii, V. N.
EVEN TRANSVERSE POTENTIAL DIFFERENCE FOR TIN. [1962] 6p. 8 refs.
Order from OTS or SLA $1.10 62-16591

Trans. of #Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1961, v. 41, no. 2, p. 665-667.

DESCRIPTORS: *Tin, Electric potential, Magnetic fields, Molecular rotation.

Previous investigations were continued on cylindrical speciments of pure tin ($\rho_{290^\circ K}/\rho_{4.2^\circ K}=60,000$) of different orientations in fields up to 7kOe. As a result of the uneven arrangement of the contacts, the potential proportional to the resistance amounted to several per cent of the measured effect. The rotation diagram for the even potential of one of the specimens (Sn-11) is compared with the rotation diagram for the resistance in the magnetic field, is given for comparison. The even potential reaches a maximum for directions of H which lead to open trajectories, however, it does not vanish in the case of intermediate directions of the magnetic field when there are no open trajectories. The origination of the even potential can be explained by the formation of closed orbits of current carriers which are elongated in one direction and are oriented in such a manner that the "elongation" direction forms an angle with the direction of the current not equal to 0° or 90°.

Kaplyanskii, A. A. and Przhevuskii, A. K.
PIEZOELECTRIC EFFECT IN RUBY CRYSTALS, tr. by B. W. Kuvshinoff. 15 Aug 62, 9p. 17 refs.
APL/JHU TG 230-T321.
Order from OTS $0.50 62-11776

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 142, no. 2, p. 313-316.
Another trans. is available from OTS or SLA $1.10 as 62-18054 [1962] 8p.

DESCRIPTORS: *Ruby, *Crystals, *Piezoelectric effect, Luminescence, Deformation, Spectrographic analysis.

Kleber, W.
THE CORRESPONDENCE BETWEEN MORPHOLOGY AND STRUCTURE OF CRYSTALS, tr. by Bertha P. Klenova. Paper read at International Crystallographers Congress (no. 3) Paris, 22 July 54. 30 June 55, 9p. 29 refs. [TVA] 3464.
Order from OTS or SLA $1.10 60-23447

Trans. of [die] Naturwissenschaften (West Germany) 1955, v. 42, p. 170-173.

DESCRIPTORS: Solid state physics, Crystals, Growth, *Morphology, *Crystal structure.

Kogan, Sh. M. and Sandomirskii, V. B.
MEASUREMENT OF CONTACT POTENTIAL OF SEMICONDUCTORS AS A METHOD FOR DETECTING VARIOUS CHARGED STATES ABSORBED ON ITS PARTICLES. [1962] 9p. (2 figs. 14 equations omitted) 1 ref.
Order from OTS or SLA $1.10 62-10992

Trans. of Problemy Kinetiki i Kataliza (USSR) [1960] v. 10, p. 62-66.

DESCRIPTORS: *Semiconductors, Electric potential, Surface properties, Absorption, Particles, Chemical bonds.

The method proposed here is based on the simultaneous measurement of the adsorption isotherm and the dependence of the contact potential of the adsorbent on pressure in the gaseous phase. This method, in principle, gives the possibility of obtaining certain information on the topography of the surface levels in the energy scheme of the semiconductor. (Author)

Kolomiets, B. T. and Mal'kova, A. A.
EIGENSCHAFTEN UND STRUKTUR TERNARER HALBLEITERSYSTEME. V. (Properties and Structure of Ternary Semiconductor-systems). (text in German).
Order from T. I. B. $1.85

Trans. of mono. Fizika Tverdogo Tela: Sbornik Statei, v. 2 [Moscow] 1959, p. 32-38.

DESCRIPTORS: Physical properties, Structure, *Semiconductors.

Kripyakevich, P. I., Tylkina, M. A., and Savitskii, E. M.
COMPOUNDS OF HAFNIUM WITH BERYLLIUM, THEIR CRYSTALLINE STRUCTURE AND CERTAIN PROPERTIES. 18 Jan 62 [18]p. 19 refs. FTD-TT-61-240; SC-895; ASTAR-2164; AD-271 861.
Order from OTS or SLA $1.60 62-19632

Unedited rough draft trans. of Zhurnal Strukturnoi Khimii (USSR) 1961, v. 2, no. 4, p. 424-433.

DESCRIPTORS: *Phase studies, *Hafnium compounds, *Beryllium compounds, Intermetallic com-

pounds, Crystal structure, Microstructure, Hardness, Lattices, X-ray diffraction analysis, Hafnium alloys, Beryllium alloys, Alloys.

The Hf-Be system was studied by x-ray diffraction and microstructural analysis and by a method of determining microhardness. The existence of four compounds was established: (1) $HfBe_2$, type AlB_2, $a = 3,775 \pm 0,002$, $c = 3,157 \pm 0,001$ kX, $c/a = 0,836$; $H_\mu = 980$ kg/mm^2; (2) $HfBe_5$, type $CaZn_5$, $a = 4,525 \pm 0,010$, $c = 3,464 \pm 0,010$ kX, $c/a = 0,765$; $H_\mu = 1340$ kg/mm^2; (3) Hf_2Be_{17}, type U_2Zn_{17}, $a = 7,484 \pm 0,002$, $c = 21,861 \pm 0,006$ kX, $c/a = 2,921$; $H_\mu = 1085$ kg/mm^2; and (4) $HfBe_{13}$, type $NaZn_{13}$, $a = 9,985 \pm 0,002$ kX; $H_\mu = 1200$ kg/mm^2. (Author)

Lichtenecker, Karl.
THE DIELECTRIC CONSTANTS OF NATURAL AND ARTIFICIAL MIXTURES: REPORT IN SUMMARY, CHAPS. I-II. [1960] 32p. (5 figs. 5 tables refs omitted).
Order from SLA $3.60 60-18974

Partial trans. (chaps. 1-2, summarized by R. Seeliger) of Physikalische Z[ei]ts[chrift] (Germany) 1926, v. 27, p. 115-133.

DESCRIPTORS: *Dielectrics, *Mixtures.

Markova, N. E.
EFFECT OF THE MEDIUM AND THE SURFACE ADSORPTION LAYER ON THE STRENGTH OF CALCITE CRYSTALS IN SPLITTING ALONG CLEAVAGE PLANES. [1962] 26p. 14 refs.
Order from OTS or SLA $2.60 62-16407

Trans. of Voronezh U. Trudy (USSR) 1938, v. 10 [no. 1] p. 48-66.

DESCRIPTORS: *Calcite, *Crystals, Hardness, Surface properties, Adsorption.

„Mashovets, T. V. and Ryvkin, S. M.
ÜBER DIE TEMPERATURABHANGIGKEIT DER LEBENSDAUER IM GERMANIUM IM EIGENLEITUNGSBEREICH (On the Temperature Depence of the Endurence in Germanium in the Intrinsic Conductor-range). 9p. (text in German).
Order from T. I. B. $1.85

Trans. of mono. Fizika Tverdogo Tela: Sbornik Statei, v. 2 [Moscow] 1959, p. 70-78.

DESCRIPTORS: *Germanium, Conductors.

Melankholin, N. M.
NEW APPARATUS FOR THE OPTICAL ORIENTATION OF A QUARTZ PEBBLE. [1962] 7p.
Order from OTS or SLA $1.10 62-16428

Trans. of Akademiya Nauk SSSR. Institut Kristallografii. Trudy, 1955, v. 11, p. 239-242.

DESCRIPTORS: *Quartz, Crystals, *Crystalholders, Piezoelectric crystals, *Optical analysis.

Mill, B. V. and Naumova, I. I.
SYNTHESIS IN THE SYSTEM Y_2O_3-Fe_2O_3-H_2O. [1962] [11]p. 10 refs.
Order from OTS or SLA $1.60 62-16598

Trans. of #Kristallografiya (USSR) 1961, v. 6, no. 5, p. 800-803.

DESCRIPTORS: *Yttrium compounds, *Ferrites, *Magnetite, Crystals, Synthesis.

Nakada, Ichiro.
THE GROWING OF ANTHRACENE SINGLE CRYSTALS. [1962] 14p. 7 refs.
Order from SLA $1.60 62-10686

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, no. 7, p. 1218-1221.

DESCRIPTORS: *Anthracenes, *Single crystals, Crystallization, Scintillation counters.

The growing of single crystals of 2.5 cm diameter and height, as scintillators for radiation measurement, was attempted. The Bridgman method of growing spontaneously with a capillary tube was unsuitable for substances such as anthracene, whose intermolecular force is weak and which is markedly anisotropic. By one method, a crystal tube only for seed, of about 1 cm diameter, was prepared separately instead of a capillary tube, and the single crystal desired was obtained by connecting a thick tube thereto. By the other method, a single crystal seed of 1 cm diameter was inserted, and we attempted to grow a single crystal from this. Results of various attempts showed that the best method was to grow (001) crystals by the latter method. The crystal, which has completed crystallization, is in a state of high temperature: when this is cooled to room temperature, cracks tend to form due to considerable shrinking and contact with the vessel wall. Good results were obtained by detaching the crystal at high temperature from the vessel wall in order to prevent this. (Author)

Ptushinskii, Yu. G. and Lupan, Yu. A.
THE SIGN OF CONDUCTIVITY OF THIN Ge FILMS. [1962] 2p. 5 refs.
Order from OTS or SLA $1.10 62-18092

Trans. of Ukr[ayins'kyi] Fiz[ychnyi] Zhur[nal] (USSR) 1959, v. 4, no. 1, p. 125.

DESCRIPTORS: *Thin films, Metal powders, *Germanium, *Electrical conductance.

An investigation of the effect of certain factors on the electrical conductivity of thin Ge films, obtained by powdering under a high vacuum of $5x10^{-9}$ mm Hg, indicated that the films have electron type conductivity. The sign of the electrical conductivity is determined in accordance with the sign of thermal emf. The absolute thermal emf is about a millivolt per degree. Ge with a specific resistance of approximately 50 ohms-cm and electron conductivity was used as the starting material. The vaporization process was conducted in an alundum coated tungsten crucible; degasification took place for a long period of time at high temperatures.

Putseiko, E. K. and Terenin, A. N.
PHOTOSENSITIZATION OF INTERNAL PHOTOEFFECT OF ZINC OXIDE AND OTHER SEMICONDUCTIVE ADSORPTIVE DYES. [1962] 16p. (14 figs. 1 table omitted) 11 refs.
Order from OTS or SLA $1.60 62-14025

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1949, v. 23, no. 6, p. 676-688.

DESCRIPTORS: *Photoelectric effect, Photosensitivity, *Semiconductors, *Dyes, *Zinc compounds, Oxides, Sulfides, Titanium compounds, Silver compounds, Halides.

Spectral curves were obtained of the inherent photoelectrical sensitivity in the ultraviolet range of powders of semiconductors of the type ZnO, ZnS; and of the halide salts TlCl, TlBr, TlI, AgCl, etc. At the adsorption of a series of dyes on the powdery semiconductors there was observed in the spectra of the photoelectrical sensitivity a supplementary maximum in the form of a range coinciding with the range of the absorption band of the adsorbed dye. The presence of such an effect of the photosensitization of the photoelectrical sensitivity was found for ZnO dyed with eosin and erythrosin, which do not have an inherent photoeffect, at which the zinc oside dyed with eosin and erythrosin as well as the undyed zinc oxide all exhibited an electronic type of conductivity. Zinc oxide dyed with rhodamine B also exhibits a supplementary photoelectrical sensitivity in the maximum of the absorption spectrum of the absorbed dye. An analogous phenomenon of the photosensitization of the photoelectrical sensitivity was observed for zinc oxide dyed with cyanin dyes which are employed as sensitizers of photographic layers. The experiments establish the fact of a photosensitization of the photoelectrical sensitivity of a series of semiconductors with adsorbed dyes of various classes. (Author)

Ruprecht, Georg.
INVESTIGATION OF THE ELECTRICAL AND PHOTOELECTRICAL CONDUCTIVITY OF THIN FILMS OF INDIUM OXIDE. [1962] 11p. (figs. refs. omitted).
Order from SLA $1.60 62-16480

Trans. of Zeitschrift für Physik (West Germany) 1954, v. 139, p. 504-517.

DESCRIPTORS: *Thin films, *Indium compounds, Oxides, Electrical conductance, Photoconductivity.

Measurements of electrical conductivity were carried out on thin vapor-deposited films of indium oxide. Its dependence on temperature and the influence of a surrounding oxygen atmosphere of variable pressure were investigated. The observed relationships at temperatures below 500°C indicate that oxygen acts on the surfaces. Above 500°C there seems to be an equilibrium between the defect content and the external oxygen concentration. Measurements of photoelectrical conductivity show an irreversible increase in vacuum. It is explained by the exhaustion of the (surface bound) oxygen content. (Author)

Ryvkin, S. M.
THE MECHANISM OF PULSE FORMATION IN SEMICONDUCTORS OF CRYSTAL COUNTERS. [1962] 8p. (2 figs. 1 table omitted) 10 refs.
Order from OTS or SLA $1.10 62-16625

Trans. of Zhurnal Tekhnicheskoi Fiziki (USSR) [1956] v. 26 [no. 12] p. 2667-2683.

DESCRIPTORS: *Semiconductors, *Crystal counters, Photoconductivity, Pulse generators, Cadmium compounds, Sulfides.

Sotskov, B. S., Chudnovskii, A. F. and others.
SEMICONDUCTOR THERMISTORS, BY I. F. VOLOSHIN, A. S. KASPEROVICH, AND A. G. SHASHKOV: BOOK REVIEWS. 9 Feb 62 [8]p. 7 refs. JPRS: 12510.
Order from OTS or SLA $1.10 62-19148

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1960, v. 3, no. 1, p. 124-126 (review of mono. Poluprovodnikovye Termosoprotivleniya, Minsk, 1959, 196p.).

DESCRIPTORS: *Semiconductors, *Thermistors, Literature.

Sueptitz, P.
THE PROPERTIES OF PHOTOELECTRONS IN SILVER CHLORIDE AT ROOM TEMPERATURE. [1962] 15p. (figs. omitted) 10 refs.
Order from SLA $1.60 62-16476

Trans. of Z[eitschrift] f[ür] Physik (West Germany) 1958, v. 153, p. 174-185.

DESCRIPTORS: *Silver compounds, Chlorides, *Single crystals, Electrons, Drift, Photoelectric effect.

Silver chloride crystals with a different history were tested with an impulse technique, utilizing the printout effect, to determine the drift mobility and the mean life span of photoelectrons. The life span of the electrons proved to be depending to a great extent on the history of the crystals. In the most carefully prepared crystals it was less than 10^{-7} sec.; in crystals

whose melt had come in contact with air or moisture, it was up to 10^{-5} sec. The reason is seen in the incorporation and addition resp. of cation impurities and oxygen ions on step transpositions. The drift mobility of the photoelectrons was determined in additional AgCl-crystals with 52 ± 4 cm2/Vsec. In crystals with CaCl2-addition a definitely reduced drift mobility was found. (Author)

Talibi, M. A. and Abdullaev, G. B.
EFFECTS OF GAMMA RAYS ON THE SYSTEMS CdS-Se AND CdSe-Se (Issledovanie Deistviya Gammaizlucheniya na Poluprovodnikovye Sistemy CdS-Se i CdSe-Se). [1962] [26]p. (foreign text included) 10 refs.
Order from OTS or SLA $2.60 62-14007

Trans. of Akademiya Nauk Azerbaidzhanskoi SSR [Baku]. Izvestiya. Seriya Fiziko-Matematicheskikh i Tekhnicheskikh Nauk, 1959, no. 4, p. 23-32.

DESCRIPTORS: *Semiconductors, *Photoelectric effect, *Gamma rays, Crystals, *Cadmium compounds, Sulfides, Selenides, Selenium.

Formulas are presented for the e. m. f. and for the effective quantum yield for penetrating radiation. These formulas are applied to the experimental result for these systems as acted on by gamma rays. (Author)

Volkenshtein, F. F.
BASIC CONCEPTIONS OF THE ELECTRONIC THEORY OF CATALYSIS ON SEMICONDUCTORS. Report presented at the International Congress on Catalysis (no. 2). [1962] 13p. 22 refs.
Order from OTS or SLA $1.60 62-16620

Trans. of Kinetika i Kataliz (USSR) 1960, v. 1, no. 1, p. 32-44.

DESCRIPTORS: *Semiconductors, *Catalysis, Electronics, Theory, Surface properties, Adsorption, Valence, Electrical conductance, Photoelectric effect.

The report represents a succint outline of actual state of the electronic theory of catalysis on semiconductors, basically in its aspect, where it was developed during the last years by the author and his coworkers. A survey is given on basic results of the theory and on a series of consequences, deriving from these results. The whole mathematical side of the theory is omitted in the report. Basic results: (a) electrically neutral and charged forms of chemisorption: (b) valency-saturated and radical forms of chemisorption; (c) passages between different chemisorption forms; (d) equilibrium between different chemisorption forms; (e) catalytic activity of the surface; (f) the role of Fermi level. Some consequences: (a) effect of chemisorption on the electroconductivity and the exit work; (b) link between surface and volume; (c) correlation between catalytic activity and electric conductivity; (d) effect of additives on catalytic activity; (e) effect illumination on adsorptive capacity. (Author)

Theoretical Physics

Meurers, Joseph.
ON THE FUNDAMENTAL AXIOM OF THE THEORY OF SPECIAL RELATIVITY. [1960] 15p. 1 ref. MDF M-130.
Order from OTS $0.50 62-11393

Trans. of Z[eitschrift] f[ür] Phys[ik] (Germany) 1936, v. 102, p. 611-625.

DESCRIPTORS: *Relativity theory, Transformations (Mathematics), Projective geometry.

By means of the physical and kinematical interpretation in Space-Time of certain geometric forms which are invariant under Lorentz transformations, various equivalent formulations of the relativity postulate are derived. A connection between these invariant forms and the relativistic addition theorem for velocities is discussed. (Author)

Pulin, D. A. and Stepanov, V. G.
DIAMAGNETIC PROPERTIES OF PLASMA EXCITED IN ARGON AND NEON. 27 Mar 62 [8]p. 12 refs. FTD-TT-62-324.
Order from OTS or SLA $1.10 62-24341

Unedited rough draft trans. of Izvestiya Vysshykh Uchebnykh Zavedenii. Fizika (USSR) 1961, no. 5, p. 26-29.

DESCRIPTORS: *Plasma physics, Excitation, Magnetic properties, *Argon, *Neon, Rare gases, *Magnetic susceptibility, Gases, Pressure.

A method for measuring the magnetic susceptibility of plasma is described. The results of the measurement of diamagnetism in plasma of inert gases are compared with the theory. The character of the dependence of the magnetic susceptibility on the gas pressure, as the measurements showed, is determined by the degree to which the plasma is magnetized. (Author)

Zagoryanskaya, E. V. and Kireev, P. S.
THE USE OF THE DOPPLER EFFECT FOR INVESTIGATING PROCESSES IN A GAS-DISCHARGE PLASMA. 28 Mar 62 [10]p. 2 refs. FTD-TT-62-323.
Order from OTS or SLA $1.10 62-24923

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1961, no. 4, p. 163-167.

DESCRIPTORS: *Plasma physics, *Gas discharges, Spectrographic analysis, Ions, Velocity, Statistical functions, Motion, Hydrogen.

The influence is analyzed of the Doppler effect on the contour of the spectral lines emitted by a gas-discharge plasma. It is shown that under certain condi-

tions the contour of the line can be used, not only for determining the temperature of the discharge, but also for finding the velocity distribution function of the ions and, in particular, for the investigation of the directed motion of the plasma layers. (Author)

Thermodynamics

Aérov, M. É. and Bystrova, T. A.
INVESTIGACION SOBRE LA TRANSMISION DE CALOR Y DE LA MASA DURANTE LA RECTIFICACION EN LA PRESENCIA DE UN REFRIGERANTE LIQUIDO INERTE (Issledovanie Teplo- i Massoperedachi pri Rektifikatsii v Prisustvie Inertnogo Zhidkogo Khladonositelya) Research on Heat and Mass Transfer During Fractionation in the Presence of an Inert Liquid Coolant). 17p. 7 refs.
CID: 62-1. (text in Spanish).
Order from OTS or ETC $1.30 62-26201

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1961, [v. 34] no. 6, p. 1193-1200.

DESCRIPTORS: *Heat transfer, Physical properties, Refrigerants, Liquids.

Andrianov, V. N.
SOME PROBLEMS OF THE THEORY OF RADIANT HEAT TRANSFER IN ONE-DIMENSIONAL SYSTEMS (Nekotoryye Zadachi Teorii Luchistogo Teploobmena v Odnomernykh Skhemakh). Mar 61 [11]p. 6 refs.
RTS 1801.
Order from OTS or SLA $1.60 61-19216

Trans. of Teploenergetika (USSR) 1960 [v. 7] no. 6, p. 63-66.

DESCRIPTORS: *Heat transfer, Theory, Density, Reflection, Transmission, Mathematical analysis, Brightness, Distribution, Diffusion, Resistance, *Thermal radiation

Gogolin, A.
REASONS FOR THE INVALIDITY OF THE LEWIS RATIO IN AIR WASHERS. [1962] [9]p. 8 refs.
C. E. Trans. 2126; NLL M-4662.
Order from OTS or SLA $1.10 62-23548

Trans. of Kholodil'naya Tekhnika (USSR) 1960 [v. 37] no. 1, p. 20-24.

DESCRIPTORS: *Air conditioning equipment, Air, Humidity, Liquid jets, Mathematical analysis, *Heat transfer.

Experiments with counter-flow air coolers were conducted under conditions of cooling and drying, and experiments with jet conditioners of the conventional type under cooling, drying, humidifying and air heating working conditions. In air cooling and drying regimes a higher value for the α/σ ratio was obtained where the humidity of the out-flowing air was higher. In air coolers with Raschig ring wetting by jets the α/σ ratio was lower than in the case of groove wetting: the reason apparently lies in a more uniform wetting of the ring surfaces by water from the jets. The α/σ ratio increases with the increase of pressure, i.e., when there is a finer spray of water. The Lewis ratio in air washers is valid in those cases where the same process of vapor exchange takes place on the entire water surface.

Ioffe, A. V. and Ioffe, A. F.
THE HEAT CONDUCTIVITY OF SOLID SOLUTIONS OF SEMICONDUCTORS (Teploprovodnost' Tverdykh Rastvorov Poluprovodnikov). 8 Feb 61, 25p. 15 refs.
JPRS: 7467.
Order from OTS $0.75 61-21198

Trans. of Fizika Tverdogo Tela (USSR) 1960, v. 2, no. 5, p. 781-792.

DESCRIPTORS: *Semiconductors, Materials, *Heat transfer, Phonons, Scattering, Impurities, Lattices, Crystal structure, *Thermal conductivity

Kokorev, L. S. and Petrovichev, V. I.
MEASUREMENT OF HEAT TRANSFER COEFFICIENTS UNDER NONSTEADY-STATE CONDITIONS. Jan 62, 3p. 8 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Zhur[nal] Prikład[noi] Mekh[aniki] i Tekh-[nicheskoi] Fiz[iki] (USSR) 1961, no. 1, p. 121ff.

DESCRIPTORS: *Heat transfer, *Fluid flow, Pipes, Thermodynamics, *Hydrodynamics.

Lin, Chi-[fang], Yang, Yu-ch'i and others.
HEAT TRANSFER IN BOILING LIQUID METALS. 16 Feb 62 [7]p. 6 refs. FTD-TT-61-182.
Order from OTS or SLA $1.10 62-24033

Unedited rough draft trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1959, no. 24, p. 832-833. Other translations are available from OTS $0.50 as 60-31382, JPRS-3512, 21 June 60, 3p. and from LC or SLA mi$1.80, ph$1.80 as 60-31396, JPRS-3531, 15 July 60 [5]p.

DESCRIPTORS: *Liquid metals, *Heat transfer, *Boiling, Mercury, Magnesium alloys.

Experiments were performed on the transfer of heat in boiling mercury and mercury-magnesium alloys at heat loads of 5000 to 47,000 kilocalories, pressures of 1 to 11 atmospheres, boiling points of 355.9 to 524°C and coefficients Pr of 0.0098 to 0.0077. At atmospheric pressure, boiling pure mercury shows film-boiling characteristics. As pressure increases, film boiling changes to bubble boiling. At 4 to 11

atmospheres an increase of pressure results in a decrease in the value of the heat transfer coefficient (α). The addition of a small amount of magnesium to pure mercury improves the "wetting" ability and the efficiency of heat transfer. The exponent n in the equation $\alpha = Aq^n$ also increases with the addition of magnesium.

Predvoditelev, A. S.
ON THE NATURE OF THERMAL MOTION IN LIQUIDS, PT. 1. Jan 62, 6p.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 6, p. 3-12.

DESCRIPTORS: Thermodynamics, *Thermal diffusion, *Hydrodynamics, *Fluid flow, Liquids, Heat of formation, Density, *Chemical engineering.

Predvoditelev, A. S.
ON THE NATURE OF THERMAL MOTION IN LIQUIDS, PT. 2. Jan 62, 5p. 1 ref.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 7, p. 3-10.

DESCRIPTORS: Thermodynamics, *Heat transfer, *Thermal conductivity, *Hydrodynamics, Liquids, Energy, Density, Evaporation, *Chemical engineering.

Predvoditelev, A. S.
ON THE NATURE OF THERMAL MOTION IN LIQUIDS, PT. 3. Jan 62, 4p. 16 refs.
Order from ICE in v. 2, no. 1, $15.00/year

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 8, p. 3ff.

DESCRIPTORS: Thermodynamics, *Thermal diffusion, *Thermal conductivity, *Hydrodynamics, Liquids, Density, Viscosity, *Chemical engineering.

Wave Propagation

Faddeev, L. D.
THE INVERSE PROBLEM IN THE QUANTUM THEORY OF SCATTERING, tr. by B. Seckler. Dec 60 [110]p. 66 refs. Research rept. EM-165; AFCRL-TN-60-1170.
Order from OTS or SLA $9.10 61-19685

Trans. of Uspekhi Matem[aticheskikh] Nauk (USSR) 1959, v. 14, no. 4(88) p. 57-[120].

DESCRIPTORS: *Electromagnetic wave reflections, Spheres, Reflection, Quantum mechanics, Quantum statistics, Scattering

This is a connected detailed representation of the results obtained during the last 12 years by the investigation of the reversion problem of the quantum theory which is formulated as follows. Under the assumption that the potential $q(x)$ for $x \to \infty$ decreases sufficiently fast, let the solution of the equation

$$L\psi = -\frac{d^2}{dx^2}\psi(x,k) + q(x)\psi(x,k) = k^2\psi(x,k)$$

$$\psi(0,k) = 0$$

have the asymptotic $\psi(x,k) \approx C(k)\sin(kx - \eta(k))$. How far is $q(x)$ determined by $\eta(k)$? How are the properties of $q(x)$ and $\eta(k)$ combined with each other? By a combination of the methods of I. M. Gel'fand and B. M. Levitan on the one hand, and V. A. Marchenko and M. G. Kreyn on the other hand, the author obtains a clear theory. The most difficult mathematical proofs are replaced by physically obvious considerations.

Krasnushkin, P. E.
BOUNDARY PROBLEM OF ELECTROMAGNETIC WAVE PROPAGATION IN SPHERICALLY STRATIFIED ANISOTROPIC DISSIPATIVE MEDIUM (Kraevaya Zadacha Rasprostraneniya Elektromagnitnykh Voln v Sferichski-Sloistoi Anizotropnoi Dissipativnoi Srede) tr. by Andre L. Brichant. 9 Sep 61, 7p. 5 refs. NASA TT F-8105.
Order from OTS or SLA $1.10 62-33203

Draft trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 138, no. 4, p. 813-816.

DESCRIPTORS: *Electromagnetic waves, Propagation, *Electromagnetic fields, Boundary layer, Spheres.

Krasovskii, R. R.
ON THE RECEPTION OF A SIGNAL DURING TROPOSPHERIC SCATTERING UNDER MULTIPLICATIVE INTERFERENCE CONDITIONS. [1961] 7p. 4 refs. MDF K-225.
Order from OTS $0.75 62-11465

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Radiotekh[nika] (USSR) 1959, v. 2, no. 6, p. 694-698.

DESCRIPTORS: *Radio signals, *Radio reception, Scattering, Radio interference, Amplitude modulation, Phase modulation, Correlation techniques, Atmosphere.

The case is considered of the reception of a signal passed through a channel with random changes in the parameters. The changes in the channel parameters are described by independent fluctuations of the amplitude and phase of the received signal. (Author)

Kurilko, V. I. and Miroshnichenko, V. I.
REPULSION OF ELECTROMAGNETIC WAVES BY PLASMA. 27 July 62 [6]p. 5 refs. FTD-TT-62-336; AD-284 095.
Order from OTS or SLA $1.10 62-32989

Unedited rough draft trans. of Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1961, v. 6, no. 3, p. 415-416.

DESCRIPTORS: *Electromagnetic waves, Propagation, Dielectrics, *Plasma physics, Electromagnetic fields, Integral equations, Differential equations

Levin, M. L.
ON THE EFFECT OF THE SURFACE CURVATURE OF A CONVEX METALLIC BODY ON THE RADIATION OF A SOURCE ON THIS SURFACE [O Vliyanii Krivizny Poverkhnosti Vypuklogo Metallicheskogo Tela na Izluchenie Istochnika, Nakhodyashchegosya na Etoi Poverkhnosti]. [1961] 2p. 3 refs. MDF L-102.
Order from OTS $.0.50 62-11301

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 13, p. 2395.

DESCRIPTORS: *Convex bodies, Metals, Surfaces, Reflection, *Electromagnetic waves, Diffraction.

If the source of a harmonic electric field, for example, a metal horn or a diffracting antenna, be situated on the surface of a perfectly conducting convex body for which all the dimensions (except the surface radius of curvature) are large compared to the wavelength, then the source radiation is usually calculated according to the 'reflection' formulas obtained by replacing the body surface by a plane screen. Here, we estimate the order of the error specified by such a substitution. (Author)

Mikaelyan, A. L.
ELECTROMAGNETIC WAVES IN A RECTANGULAR WAVEGUIDE FILLED WITH A MAGNETIZED FERRITE [Elektromagnitnye Volny v Pryamougol'nom Volnovode, Zapolnennom Namagnichennym Ferritom]. [1961] 7p. 3 refs. MDF M-101.
Order from OTS $0.50 62-11617

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1954, v. 98, no. 6, p. 941-944.

DESCRIPTORS: *Electromagnetic waves, Propagation, *Waveguides, *Ferrites, Magnetic properties, Wave analysis.

An analysis is made of the propagation of electromagnetic waves in a rectangular waveguide filled with a ferrite which is magnetized in a direction perpendicular to the waveguide axis, i. e., along the z axis, by a constant magnetic field of intensity H_z.

Nemirovskii, A. S.
PASS BANDWIDTH IN SINGLE AND DIVERSITY RECEPTION OF LONG-RANGE UHF SIGNALS OF TROPOSPHERIC PROPAGATION. 21 Aug 61 [16]p. 7 refs. USASIA Trans. Log no. 1226.
Order from OTS orSLA $1.60 62-32633

Trans. of #Elektrosvyaz' (USSR) 1961 [v. 15] no. 5, p. 18-25.

DESCRIPTORS: Atmosphere, Radio waves, *Propagation, Radio relay systems, Ultra high frequency, *Radio signals, *Diversity reception, Radio reception, Diffraction.

The paper shows that the pass band of a tropospheric radio relay line is greatly expanded in those cases when, in addition to the scatter component, the regular, diffraction component reaches the point of reception, or when diversity signals are received by the method of linear summation before they reach the FM detector. (Author)

Prosin, A. V.
CONTRIBUTION TO THEORY OF GROSS-DISTORTION FOR LONG-DISTANCE TROPOSPHERIC PROPAGATION OF ULTRA-SHORT WAVES. 27 July 61 [26]p. 10 refs. USASIA Trans. Log no. 1192.
Order from OTS or SLA $2.60 62-32664

Trans. of #Radiotekhnika i Elektronika (USSR) 1960, v. 5, no. 7 [p. 1052-1064].

DESCRIPTORS: Frequency modulation, Communication systems, Multiplex transmission, Atomosphere, *Radio waves, *Propagation, *Radio interference, Theory.

This article examines the methods for calculating cross-noises arising in FM long-distance multichannel communications systems and in systems using channel frequency multiplexing due to the interaction of the constant and scatter fields at the receiving terminal. (Author)

Prosin, N. I.
LONG-DISTANCE SCATTERED REFLECTION FROM THE EARTH ON SHORT WAVES. [1962] [35]p. 38 refs. [USASIA] Trans. Log no. 1144.
Order from OTS or SLA $3.60 62-32631

Trans. of #Radiotekhnika i Elektronika (USSR) 1960, v. 5, no. 10, p. 1576-1591.
An abstract trans. is available from LC or SLA mi$2.40, ph$3.30 in 61-15663, AID-60-112, 22 Dec 60, 12p.

DESCRIPTORS: *Radio waves, *Reflections, Scattering, Geophysics.

The phenomenon of long-distance scattered reflection from the Earth on short waves, discovered in the Soviet Union in 1946-1947, began to be studied in 1947 and to be employed for scientific and practical purpose

in 1948-1949. The paper presents certain experimental results obtained in the U.S.S.R. Results published in the West in the 1949-1959 period are in fundamental agreement with the results achieved in the Soviet Union. The author points out the possibilities of the scientific and practical consideration and utilization of the phenomena of long-distance scattered reflection and the need for its further study. (Author)

Troitskii, V. N.
PROPAGATION OF CENTIMETER WAVES OVER MOUNTAINOUS PATHS OF GREAT DISTANCE [Rasprostranenie Santimentrovykh Vol'n na Gornykh Trassakh Bol'shoi Protyazhennost]. 21 June 61 [31]p. 1 ref. USASIA Trans. Log no. 1177.
Order from OTS or SLA $1.60 62-32666

Trans. of #Radiotekhnika i Elektronika (USSR) 1960, v. 5, no. 12, p. 1919-1924.
Another trans. is available from OTS $0.50 as 61-21650, JPRS-9173, 25 Apr 61, 9p.

DESCRIPTORS: *Radio waves, Propagation, Attenuation, Geophysics.

For abstract see Technical Translations 6: 226, 1961.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

MAIN FACTORS IN TECHNICAL PROGRESS. 2 July 62 [8]p. JPRS: 14337.
Order from OTS or SLA $1.10 62-25596

Trans. of Klubnyi Kalendar' (USSR) 1962, no. 1, p. 46-47.

DESCRIPTORS: *Automation, Control systems, Remote control systems, Labor, Economics, Agriculture, Science.

AT THE GENERAL MEETINGS OF THE DEPARTMENTS OF THE ACADEMY OF SCIENCES OF THE USSR. 13 Aug 62 [38]p. JPRS: 14816.
Order from OTS or SLA $3.60 62-32370

Trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 4, p. 56-81.

DESCRIPTORS: *Conferences, *Scientific organizations, *Scientific research, Physics, Mathematics, Chemistry, Geology, Geography, Biology, History, Economics, Philosophy, Political science, Literature, Language.

CYBERNETICS AND INFORMATION CONTROL. 30 Aug 62 [31]p. JPRS: 15057.
Order from OTS or SLA $3.60 62-32842

Trans. of Znanie-Sila (USSR) 1962 [v. 37] no. 4, p. 26-29; Ekonomicheskaya Gazeta (USSR) 1962, no. 27(48) p. 5; and from Sovetskaya Belorussiya (USSR) 1962 [no. 191] 10 July, p. 4.

DESCRIPTORS: *Cybernetics, Agriculture, Data processing systems, *Scientific information centers.

Contents:
Cybernetics and agriculture, by I. A. Budzko
Cybernetics at the service of man, by Vadim Trapeznikov
An important step in the development of scientific and technical information. by N. Arutyunov.

NORTH VIETNAM'S SCIENTIFIC ACTIVITIES: SELECTED ARTICLES. 31 July 62 [20]p. JPRS: 14668.
Order from OTS or SLA $1.60 62-32193

Trans. of Tin Tuc Hoat Dong Khoa-Hoc [sic] (North Vietnam) 1962 [no. 5] p. 10-15, 34, 58; and from Nhan Dan (Vietnam) 1962, 2 June, p. 1.

DESCRIPTORS: *Vietnam, Scientific organizations, *Scientific research, *Industrial research, Conferences, *Operations research, Laos, Professional personnel.

Contents:
Conference on 1962 scientific activities, 30-31 Mar 62
Study and application of operations research
Vinh Phuc Association for the Promotion of Technology and Science, provincial meeting (no. 1) Apr 62
Vietnamese technicians help Laos.

SCIENCE: IN THE FOREMOST POSITIONS (GENERAL MEETING OF THE ACADEMY OF SCIENCES KAZAKH SSR). 21 Sep 62 [11]p. JPRS: 15379.
Order from OTS or SLA $1.10 62-33139

Trans. of Kazakhstanskaya Pravda (USSR) 1962, 1 June, p. 3.

DESCRIPTORS: *Science, *Conference, Scientific research.

SYMPOSIUM OF WORKS ON ELECTROMECHANICS, 1961, NO. 5: SELECTED ARTICLES. 3 Apr 62 [127]p. 35 refs. JPRS: 13298.
Order from OTS or SLA $10.10 62-23804

Trans. of Sbornik Rabot po Voprosom Elektromekhaniki (USSR) 1961, no. 5, p. 3-28 and 39-84.

DESCRIPTORS: *Computers, *Electromechanical converters, *Digital systems, *Analog systems, Analy-

tic geometry, *Bioelectronics, *Conditioned reflex, Control systems, Complex variables, *Programming, Functions, *Feedback, Mathematical logic, Symposia.

Contents:
Algorithms for digital analogs that generate parabolic functions, by A. R. Garbuzov
Electromechanical device realizing a conditioned reflex, by A. A. Nazarov and Yu. P. Petrov
Periodic modes in an extremal regulation system, by E. Yu. Benua
Possibilities of using computers in program control, by A. A. Voronov
Synthesis of differential analyzers for duplicating implicit functions, by M. B. Ignat'ev
Certain problems in the synthesis of program-control systems with feedback, by M. B. Ignat'ev
Digital analogs and shift registers with logic feedback, by B. L. Ermilov and A. N. Radchenko.

SYMPOSIUM OF WORKS ON ELECTROMECHANICS, 1961, NO. 5: SELECTED ARTICLES. 18 Apr 62 [103]p. 23 refs. JPRS: 13512.
Order from OTS or SLA $9.10 62-24020

Trans. of Sbornik Rabot po Voprosom Elektromekhaniki (USSR) 1961, no. 5, p. 149-161, 176-188, 201-266, 276-281.

DESCRIPTORS: *Electronic equipment, *Electromechanical converters, *Servomechanisms, *Astronomy, Photoelectric cells, *Tracking telescopes, *Programming, Transformers, *Telemeter systems, *Coding, Magnets, *Information theory, *Bioelectronics, Integrators, Symposia.

Contents:
Automatic control of the transfer characteristics of photoelectric servomechanisms, by P. V. Nikolaev
Continuous control system ensuring the operation of a telescope at a given program, by Z. N. Mamedova
Use of magnetic elements in code-type telemetry systems, by V. E. Chernhshev
Concerning the problem of design of complex devices for the transmission of information with centralized control, by M. I. Lanin
Numerical and combinational methods for coding information, by V. I. Filippov
Electronic instruments for analysis of bioelectric currents, by S. A. Evdokimov and others.

Dobrushin, R. L.
OPTIMAL BINARY CODES FOR SMALL RATES OF TRANSMISSION OF INFORMATION. 23 July 62 [14]p. 7 refs. JPRS: 14556.
Order from OTS or SLA $1.60 62-32051

Trans. of #Teoriya Veroyatnostei i Ee Primeneniya (USSR) 1962, v. 7, no. 2, p. 208-213.

DESCRIPTORS: *Data, *Transmission, *Coding, Errors, Probability, Data transmission systems, *Information theory.

Erdei, Ferenc.
THE GENERAL ASSEMBLY OF THE HUNGARIAN ACADEMY OF SCIENCES (NO. 122) IN 1962 [AND] REPORT OF THE PRESIDIUM AT THE 1962 GENERAL ASSEMBLY OF THE HUNGARIAN ACADEMY OF SCIENCES. 29 Aug 62 [44]p. JPRS: 15039.
Order from OTS or SLA $4.60 62-32671

Trans. of Magyar Tudomany (Hungary) 1962, v. 7[69] no. 5, p. 281-306 and 327-333.

DESCRIPTORS: *Scientific organizations, *Conferences, *Hungary.

Paton, B.
ACADEMY OF SCIENCES, UKRAINIAN SSR, TO INTENSIFY EFFORTS TOWARD TECHNICAL AND SCIENTIFIC PROGRESS. 27 Aug 62 [11]p. (photo omitted). JPRS: 14997.
Order from OTS or SLA $1.60 62-32562

Trans. of Ekonomicheskaya Gazeta (USSR) 1962, no. 30(51) p. 3-4.

DESCRIPTORS: *Scientific research, Research program administration.

Rozenberg, M. I.
CYBERNETICS IN SOVIET RESEARCH AND EDUCATION. 11 Sep 62 [20]p. 6 refs. JPRS: 15214.
Order from OTS or SLA $1.60 62-33007

Trans. of Sovetskaya Pedagogika (USSR) 1962 [v. 26] no. 6, p. 70-76.

DESCRIPTORS: *Cybernetics, Scientific research, Education, *Teaching machines.

Szollosy, Laszlo [and others].
INVENTIONS DEVELOPED AT RESEARCH INSTITUTES OF THE HUNGARIAN ACADEMY OF SCIENCES [AND] NEWS OF THE SCIENTIFIC QUALIFYING COMMITTEE, NEW CANDIDATES, DEC 61. 27 July 62 [10]p. JPRS: 14616.
Order from OTS or SLA $1.10 62-32068

Trans. of Magyar Tudomany (Hungary) 1962, v. 7[69] no. 3, p. 181-183 and 191-192.

DESCRIPTORS: *Inventions, *Scientific personnel, Personnel, Scientific research, *Hungary.

Yao, Chao-wei.
A DISCUSSION OF MACHINE TRANSLATION. Foreign Developments in Machine Translation and Information Processing, no. 92. 17 Apr 62 [11]p. JPRS: 13478.
Order from OTS or SLA $1.60 62-23917

Trans. from Jen Min Jih Pao (Chinese People's Republic) 1962, 25 Feb, p. 5.

DESCRIPTORS: *Machine translation, Language, Vocabulary.

Communication Theory

COMMUNICATIONS NETWORKS, PT. I: REVIEW OF SOVIET LITERATURE. Quarterly rept. no. 1 on AID Work Assignment no. 33. 29 June 62 [22]p. AID rept. 62-92.
Order from OTS or SLA $2.60 62-32109

Abstracts of articles reviewing Soviet development in communications networks, based on source materials made available at AID.

DESCRIPTORS: Communication equipment, *Communication systems, Literature

COMPLETE AUTOMATION OF THE SWISS TELEPHONE NET. [1960] [23]p. USASIA: H-6767A/60; JPRS: R-1156-D.
Order from OTS or SLA $2.60 60-31806

Trans. of [PTT Technische Mitteilungen] (Switzerland) 1960 [v. 38] no. 1, p. 1-20.

DESCRIPTORS: Automatic, *Telephone communication systems, *Switzerland.

Translations are presented of two speeches that were delivered at a banquet at the Bristol Hotel in Berne on 2 December 1959. The banquet was organized by the PTT (General Post Office) to celebrate the completion of automation for the Swiss Telephone Net. The speeches given here are those by Mr. Ed Weber, Director-General of the PTT, and Mr. G. A. Wettstein, Director of the Telephone and Telegraph Division of the PTT General Directorate.

THE ONE-HUNDREDTH ANNIVERSARY OF THE BIRTH OF A. S. POPOV, ANNIVERSARY SESSION: SELECTED PARTS. 12 Mar 62 [95]p. 27 refs. FID-TT-61-245.
Order from OTS or SLA $8.60 62-24953

Unedited rough draft trans. of mono. 100 Let so Dnya Rozhdeniya A. S. Popova, Yubileinaya Sessiya, Moscow, 1960, p. 41-56, 79-83, 125-140, 171-177, 202-210, 228-234.

DESCRIPTORS: *Communication systems, *Telegraph systems, Coding, Economics, Statistical analysis, Errors, Corrections, *Data storage systems, Feedback, Probability, Signals, Transmission, *Phase distortion, Pulse transmitters, *Noise analyzers, Pulse amplifiers, Design, Broadband, Electronic equipment, Communication equipment, Signal-to-noise ratio, Amplifiers, Superhigh frequency, Electron beams, Plasma oscillations, Electron guns, Noise, Reduction, Semiconductors, *Telegraph transmitters, *Telephone transmitters, Boosters, *Voice communication systems, Speech transmission, Interference, Functions, Communications theory.

Contents:
On the use of correcting codes in official communications, by V. I. Siforov and L. F. Borodin
Threshold signals in incoherent storage with an exponential weighting function, by Yu. S. Lezin
The use of signal phase predistortions for increasing the noise immunity of communication systems, by Yu. N. Babanov
The design principles of multistage broadband and pulse amplifiers with compensation, by V. P. Shsherin
Perspectives for designing SHF amplifiers with a low noise factor, by V. A. Afanas'ev
A method for increasing the peak and average power of a single band transmitter, by B. I. Rassadin
The running compensation of a voice signal, by V. V. Furduev and S. I. Krechmer.

THE "SOUND BRIDGE" TWENTY YEARS OF THE SCHWARZENBURG SHORT-WAVE TRANSMITTER. 27 July 60 [12]p. USASIA: H-6761; JPRS: R-981-D.
Order from OTS or SLA $1.60 60-31461

Trans. of [PTT Technische Mitteilungen] (Switzerland) 1959 [v. 37] no. 6, p. 194-197.

DESCRIPTORS: *Radio broadcasting, *Radio transmitters, Switzerland.

The Swiss Schwarzenburg short-wave transmitter began operations in the spring of 1939 with broadcasts to North and to South America. It has been twenty years since our "international" transmitter has undertaken the task assigned it by the Federal Council. The Federal Council has said: "We would like to show people abroad, without seeming forward or presumptuous, that Switzerland is not only a land of industry, commerce and foreign trade, but that it is also a land of great culture, of an old and unique civilization, and that we have always contributed our unique share to the total culture of Europe and of the world". (Extracted)

Badraun, Chr.
THOUGHTS AT THE COMPLETION OF THE AUTOMATION OF THE LAST SWISS LOCAL NET OF SCUOL/SCHULS. [1962] [12]p. USASIA: H-6767B/60; JPRS: R-1157-D.
Order from OTS or SLA $1.60 60-31807

Trans. of PTT [Technische Mitteilungen] (Switzerland) 1960 [v. 38] no. 1, p. 20-25.

DESCRIPTORS: Automatic, *Telephone communication systems, *Switzerland.

The telephone net of Scuol/Schuls commenced automatic operation on 3 December 1959. With the connection of this net to the automatic telephone net, it became possible for every Swiss telephone connection of all inland contacts to make its own connections through the dial. This powerful net now spans our whole country with 1.5 million call-stations. About 97 percent of the conductors with a total wire length of about 6 million kilometers are laid underground, while 934 large and small exchanges are distributed countrywide. Automation in Switzerland up to complete automation of the total telephone net required about 40 years. The installation of this extensive cable net, as well as the erection of automatic exchanges, altogether represents a prodigious piece of work which could have been possible only through the understanding and energetic cooperation of the PTT Administration, industry, and trade of our country. (Extracted)

Baggenstos, G.
ORGANIZATION AND OPERATION OF THE TELEGRAPH NETWORKS IN SWITZERLAND. 10 Oct 60 [27]p. USASIA: H6763a; JPRS: R-1187-D.
Order from OTS or SLA $2.60 60-31844

Trans. of PTT [Technische Mitteilungen] (Switzerland) 1958, v. 36, no. 2, p. 49-61.

DESCRIPTORS: *Telegraph systems, Operation, *Switzerland.

Bartholomai.
COMMUNICATION AND MEASURING ENGINEERING. 30 June 60 [11]p. (8 figs. omitted). USASIA: SC-121a/60; JPRS: R-858-D.
Order from OTS or SLA $1.60 60-31343

Trans. of die Technik (Germany) 1960 [v. 15] no. 3, * Messeheft, p. 192-195.

DESCRIPTORS: *Communication equipment, *Communication systems, Navigation, Ships, Intercommunication systems, Design.

Basaev, E. V.
AUTOMATION OF CITY TELEPHONE SERVICE. [1962] [11]p. [USASIA] Trans. Log no. 1039.
Order from OTS or SLA $1.60 62-32643

Trans. of #Vestnik Svyazi (USSR) 1959 [v. 19] no. 1 [226] p. 9-10.

DESCRIPTORS: Automation, Urban areas, *Telephone communication systems, Telephones, Electronic equipment.

Blokh, E. L. and Kharkevich, A. A.
CODING STABILITY WITH RESPECT TO FACING (ANTIFACING CODING). 21 Aug 61 [8]p. 5 refs. USASIA Trans. Log no. 1227.
Order from OTS or SLA $1.10 62-32634

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 4, p. 3-6.
Another trans. is available from OTS $0.50 as 62-11556, MDF B-167 [1960] 6p.

DESCRIPTORS: *Communications theory, Signals, Transmission, *Coding, Stability, Attenuation, Signal-to-noise ratio, Interference.

For abstract see Technical Translations 8: 295, 1962.

Brusilovskii, K. A. and Karazei, Z. I.
CONTACTLESS TELEGRAPHIC TEST SIGNAL EMITTER. 15 Aug 61 [10]p. 3 refs. USASIA Trans. Log no. 1216.
Order from OTS or SLA $1.10 62-32612

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 12, p. 56-60.

DESCRIPTORS: *Telegraph transmitters, Telegraph signals, Transmission, Tests, Switching circuits.

The paper describes a telegraph transmitter of undistorted test signals. It's construction is based on semiconductor devices and ferrites with a rectangular hysteresis loop, sending the following types of transmission: 1:1, 2:2, 1:6, 6:1, and a combination Q9S accepted by the CCIT as a test text for checking the channels of an audio frequency telegraph. (Author)

Faessler, M.
EXCHANGE TECHNIQUE OF TELETYPE NETWORKS IN SWITZERLAND. 10 Oct 60 [14]p. USASIA: H6763b; JPRS: R-1188-D.
Order from OTS or SLA $1.60 60-31845

Trans. of PTT [Technische Mitteilungen] (Switzerland) 1958 [v. 36] no. 2, p. 61-62.

DESCRIPTORS: *Communication systems, Telephone communication systems, Telegraph systems, *Teletype systems, Switzerland.

Günter, Paul.
THE LOW-CURRENT INSTALLATIONS OF THE CENTRAL TELEGRAPH-TELEPHONE DEPOT AT BERNE-OSTERMUNDIGEN. 10 Oct 60 [25]p. USASIA: H6763c; JPRS: R-1189-D.
Order from OTS or SLA $2.60 60-31846

Trans. of PTT [Technische Mitteilungen] (Switzerland) 1958 [v. 36] no. 2, p. 67-82.

DESCRIPTORS: *Telegraph systems, *Telephone communication systems, Multichannel telephone systems, Installation, *Switzerland.

Hitz, H.
WIRE BROADCASTING IN SWITZERLAND. Rept. no. 3. 6 Dec 60 [10]p. USASIA: H-6765c; JPRS: R-1226-D.
Order from OTS or SLA $1.10 60-31889

Trans. of PTT [Technische Mitteilungen] (Switzerland) 1959 [v. 37] no. 9, p. 400-405.

DESCRIPTORS: *Radio broadcasting, Radio transmission, *Telephone communication systems, Radio transmitters, *Switzerland

Jacot, J. and Valloton, J.
DEVELOPMENT OF TELEPHONE TRANSMISSION ENGINEERING IN SWITZERLAND FROM ITS ORIGIN TO MODERN TIMES. 6 Dec 60 [36]p. USASIA: H-6765a; JPRS: R-1224-D.
Order from OTS or SLA $3.60 60-31887

Trans. of PTT [Technische Mitteilungen] (Switzerland) 1959 [v. 37] no. 9, p. 355-370.

DESCRIPTORS: *Telephone transmitters, *Telephone lines, Telephone communication systems, Telephones, Engineering, Switzerland.

Kaczynski, T.
PROFITABILITY OF LOCAL AUTOMATIC EXCHANGES. 24 Nov 58 [13]p. JPRS(NY)-L-384.
Order from OTS or SLA $1.60 PB 141 283T

Trans. of Gospodarka Lacznosci (Poland) 1958, no. 5, p. 5-8.

DESCRIPTORS: Automatic, *Telephone communication systems, Economics, *Poland

Levin, B. R., Maksimov, Yu. T., and Merkader, L. P.
CROSS-DISTORTION IN THE JOINT TRANSMISSION OF TELEVISION AND TELEPHONE SIGNALS. 21 Aug 61 [20]p. 2 refs. USASIA Trans. Log no. 1229.
Order from OTS or SLA $1.60 62-32635

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 4, p. 49-61.

DESCRIPTORS: *Video signals, *Telephone signals, Signals, Transmission, Distortion, Nonlinear systems, Radio relay systems, Communication systems, Multichannel telephone systems, Statistical processes.

By means of the transformation formulas for the correlation functions of random processes in a nonlinear system, a general expression is found for the energy spectrum of distortions arising in the video circuit of communication lines for joint transmission of television and multichannel telephone signals. The distortions are analysed in detail for the case where the television signal is not transposed and the spectrum of the multi-channel telephone signals is situated in the high-frequency band. (Author)

Locher, F.
FROM URBAN NETWORK TO WORLDWIDE TELEPHONY. 6 Dec 60 [20]p. USASIA: H-6765b; JPRS: R-1225-D.
Order from OTS or SLA $1.60 60-31888

Trans. of PTT [Technische Mitteilungen] (Switzerland) 1959 [v. 37] no. 9, p. 381-392.

DESCRIPTORS: Telephones, *Telephone communication systems, *Switzerland.

Morand, M. and Hauser, H.
THE TANDEM EXCHANGE AT SION. 26 July 60 [30]p. USASIA: H-6768; JPRS: R-957-D.
Order from OTS or SLA $2.60 60-31429

Trans. of PTT [Technische Mitteilungen] (Switzerland) 1960 [v. 38] no. 2, p. 51-61.

DESCRIPTORS: Telephones, *Telephone communication systems, Multichannel telephone systems, *Switzerland, Telephone amplifiers.

Pevner, B. M.
EFFICIENCY AND INTERFERENCE-SUPPRESSION OF DIFFERENT METHODS OF DOUBLE SIGNAL TRANSMISSION. 15 Aug 61 [15]p. 11 refs. USASIA Trans. Log no. 1212.
Order from OTS or SLA $1.60 62-32608

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 12, p. 11-18.

DESCRIPTORS: Signals, *Video signals, *Radio signals, *Transmission, Radio broadcasting, Communication systems, Noise (Radio), Radio interference, Suppressors, Signal-to-noise ratio.

Design methods are given for interference suppression and the effective use of the channel in certain cases of transmission of two signals in a common transmission channel. The results of parameter design and comparative evaluation of the presented transmission methods are analyzed. (Author) (Presented at the All-Union Session of the Popov NTORiE, 12th June, 1959 in Moscow)

Polykovskii, A. M.
NEW METHOD OF SYNTHESIS OF THE VOICE SPECTRUM. 15 Aug 61 [10]p. 2 refs. [USASIA] Trans. Log no. 1219.
Order from OTS or SLA $1.10 62-32615

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 12, p. 72-75.
Another trans. is available from OTS $0.50 in 61-21410, JPRS-6997, 29 Mar 61, 15p.

DESCRIPTORS: *Reading machines, *Language, *Speech, Coding.

For abstract see Technical Translations 6: 62, 1961.

Schiess, W.
AN IMPORTANT EVENT: THE INAUGURATION OF THE GENEVA-LAUSANNE COAXIAL CABLE, THE FIRST SECTION OF THE EAST-WEST SYSTEM [Un Evénement Important: l'Inauguration du Câble Coaxial Genève-Lausanne, Premier Tronçon de l'Artère Ouest-est]. 27 July 60 [25]p. JPRS: R-989-D; USASIA: H-6764.
Order from OTS or SLA $2.60 60-31469

Trans. of PTT Technische Mitteilungen (Switzerland) 1959 [v. 37] no. 7, p. 241-252.

DESCRIPTORS: *Telephone communication systems, *Telephone lines, *Coaxial cables, Installation, *Switzerland.

Suzuki, George.
PITCH EXTRACTOR. [1962] 4p. 1 ref.
Order from SLA $1.10 62-14469

Trans. of [Nihon Onkyo Gakkaishi] (Japan) 1960, v. 16, no. 4, p. 281-283.

DESCRIPTORS: Speech, *Speech transmission, Voice communication systems, *Pitch discrimination, Sound transmission, Electronic equipment.

The experiment was based on the desirability of designing a pitch extractor which would extract a rapidly changing pitch with analog voltage, in addition to its use for a vocoder in the discrimination of voices. (Author)

Walther, Gerhard.
TECHNICAL DEVELOPMENT OF EAST GERMAN RADIO. 27 Feb 62 [16]p. JPRS: 12799.
Order from OTS or SLA $1.60 62-23415

Trans. of mono. Bonner Berichte aus Mittel- und Ostdeutschland (Bonn Reports on Central and East Germany) Bonn/Berlin, 1961, p. 104-119.

DESCRIPTORS: *Radio broadcasting, Radio stations, Radio transmitters, Radio equipment, Radio jamming, *East Germany.

Zeliger, N. B.
CRITERIA FOR ESTIMATING THE QUALITY OF TELEGRAPHIC TRANSMISSION. 21 Aug 61 [16]p. 7 refs. USASIA Trans. Log no. 1230.
Order from OTS or SLA $1.60 62-32636

Trans. of #Elektrosvyaz' (USSR) 1960 [v. 14] no. 4, p. 62-71.

DESCRIPTORS: *Telegraph signals, Transmission, *Telegraph transmitters, Quality control, Distortion, Corrections.

Criteria are given for estimating the quality of telegraphic transmission in terms of the degree of start-stop distortion, the degree of general distortion, the phase range of reception, and the correcting power of telegraphic equipment. The correcting power is calculated and a relationship is established between the phase range of reception, the correcting power of start-stop equipment and the reserve stability of telegraphic communication. The principles which underlie the measurement of start-stop and general distortion are explained. (Author)

SOCIAL SCIENCES

PROBLEMS OF PHILOSOPHY, 1962, VOL. 16, NO. 5: [SELECTED] TRANSLATIONS. 29 Aug 62 [84]p. JPRS: 15049.
Order from OTS or SLA $8.10 62-32667

Trans. of Voprosy Filosofii (USSR) 1962, v. 16, no. 5, p. 30-58, 116-129, 136-150, 157-161.

DESCRIPTORS: *Philosophy, *Biology, *Social sciences, *Political science, Economics, *Probability, Communism, Statistical analysis.

Contents:
The state of interdisciplinary problems of the biological and social sciences, by B. F. Porshnev
Some methodological problems of political economy, by Ya. A. Kronrod
Philosophy as a general science, by B. M. Kedrov
Probability and its role in the development of knowledge, by Yu. V. Sachkov
The philosophy section of the Conference of the Heads of Departments of Social Sciences, by V. S. Markov and Yu. P. Petrov
The Leninist understanding of the identity of logic, dialectics and the theory of knowledge and its development, by K. M. Dolgov (review of mono. Dialektika Kak Logika (Dialectics as Logic) by P. V. Kopnin).

STANDARD TRANSLATION OF CHINESE COMMUNIST TERMS. [1962] [135]p.
Order from OTS or SLA $10.50 62-33272

DESCRIPTORS: *Language, Standards, *Vocabulary, Political science, Economics, Sociology, China.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 17. 17 Sep 62 [21]p. JPRS: 15293.
Order from OTS or SLA $2.60 62-33019

Trans. of Partiinaya Zhizn' (USSR) 1962, no. 12, p. 9-17; Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 6, p. 84-86; and from Sovetskaya Latviya (USSR) 1962, 2 June.

DESCRIPTORS: *Industrial production, *Economics, *Labor, Industrial plants, Distribution, *Automation, *Technological intelligence, Wood, Textiles, Food, Leather.

Contents:
Distribution of productive forces in the period of the large-scale building of communism, by A. Korobov
To speed up the complete mechanization of processes of production
Inspection of the level of technological processes at enterprises of the Moscow City sovnarkhoz, by V. E. Yanin.

Liu, Tse-jung.
ON PROBLEMS CONCERNING THE LEGAL STATUS OF OUTER SPACE, tr. by Jon Fong. 2 June 61 [26]p. 7 refs. Rand T-141.
Order from OTS or SLA $2.60 61-27248

Trans. from Kuo Chi Wen Ti Yen Chiu [sic] (Chinese People's Republic) 1959, no. 8.

DESCRIPTORS: *Space flight, Political science

Sisakyan, N. M.
THE PUGWASH MEETINGS OF SCIENTISTS: A SOVIET VIEW. 29 Aug 62 [10]p. JPRS: 15048.
Order from OTS or SLA $1.10 62-32668

Trans. of Akademiya Nauk SSSR. Vestnik, 1961, v. 31, no. 11, p. 81-84.

DESCRIPTORS: Scientific personnel, Personnel, *Conferences.

The last 7th and 8th conferences took place in the United States of America, in the town of Stowe in the state of Vermont from September 5 to 16. Participants availed themselves of the hospitality of the National Academy of Sciences in Washington and of the American Academy of Arts and Sciences in Boston. The conferences opened during a period of serious tension in international relations. Under these circumstances the responsibility of the scientists before humanity became even more apparent. Although there were among the participants in the meeting far-reaching differences of opinion as regards the evaluation of the reasons for the origin of international tension, the overwhelming majority of the scientists demonstrated, after a broad exchange of views, a striving toward reciprocal understanding. This made possible the unanimous acceptance of constructive propositions regarding the important questions which had been debated at the conference. The Pugwash movement is one of the important and essential factors in the present stage of the struggle for the ensuring of peace, for the development of reciprocal understanding among peoples. (Extracted)

Documentation

Vakhlamov, I. A.
MEJORA DE LA ORGANIZACION DEL TRABAJO DE LOS OBREROS AUXILIARES (Uluchshat'Organizatsiyu Truda Vspomogatel'nykh Rabochikh) (Improvement in the Organisation of Auxiliary Operators). 11p.
CID: 62-61.
Order from OTS or ETC $1.05 62-26261

Trans. of [Avtomobil'naya Promyshlennost'] (USSR) 1955, no. 1, p. 7-9.

DESCRIPTORS: *Engineering personnel

MECHANICAL PATENT SEARCHER. Foreign Developments in Machine Translation and Information Processing no. 106. 25 Sep 62, 5p. JPRS: 15429.
Order from OTS $0.50 62-11778

Trans. of Izobretatel' i Ratsionalizator (USSR) 1962, no. 8, p. 29-30.

DESCRIPTORS: *Patents, *Information retrieval, Data processing systems, Data storage systems, Machine translation, Documentation.

Picot, G., Deribere-Desgardes, M. L., and Levery, F.
AN EXPERIMENT IN THE AUTOMATIC SELECTION OF DOCUMENTATION. [1962] 10p.
Order from SLA $1.10 62-16755

Partial trans. (p. 8-11) of Rev[ue de la] Doc[umentation] (Netherlands) 1962, v. 29, no. 1, p. 8-13.

DESCRIPTORS: *Documentation, *Information retrieval, Digital computers, Data storage systems, Experimental data, Chemistry

A mechanical retrieval system (similar to the system used by ASTIA) was tested on a collection of 10,000 documents relating to organic chemistry. An IBM 705

machine was used. The average number of key-words (or descriptors) was about 8 per document. A total of some 12,316 key-words were applied to the collection. After the documents were analyzed (i.e., the key-words applied) 75 requests were handled. The method permitted finding 92% of the documents sought with about 25% useless documents (false drop). It is estimated that the 8% of missing documents could be reduced by a more thorough analysis or original processing of the documents. The 75 requests required about a day and a half for printing and about an hour of machine time. The amount of time spent in analyzing or processing the requests is not given, but it is stated that it "consists essentially of preparing correctly the requests."

Rabei, M.
STANDARDS IN LIBRARY WORK, tr. by B. L. Pearce. [1959] 10p. M612.
Order from OTS or SLA $1.10 59-22636

Trans. of Bibliotekar (USSR) 1958, no. 10, p. 43-46.

DESCRIPTORS: *Library science, Libraries, Operation, Standards, Documentation

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/5936
Peresada, Viktor Petrovich
RADAR VISIBILITY OF OBJECTS AT SEA (Radiolokatsionnaya vidimost' morskikh ob"yektov) Leningrad, Sudpromgiz, 1961. 148p. 4300 copies printed.

BR-SOV/5945
Luizov, Andrey Vladimirovich
PERSISTENCE OF VISION (Inertsiya zreniya) Moscow, Oborongiz, 1961. 247p. Errata slip inserted. 4025 copies printed.

BR-SOV/5946
Kornilov, Ivan Ivanovich
PHYSICAL AND CHEMICAL BASES FOR THE HEAT RESISTANCE OF ALLOYS (Fiziko-khimicheskiye osnovy zharoprochnosti splavov) Moscow, Izd-vo AN SSSR, 1961. 515p. Errata slip inserted. 3200 copies printed.

BR-SOV/5947
Prokoshkin, Dmitriy Antonovich and others.
ALLOYING CHROMIUM-MANGANESE STAINLESS STEEL (Legirovaniye khromomargantsovistoy nerzhaveyushchey stali) Moscow, Izd-vo AN SSSR, 1961. 74p. Errata slip inserted. 3000 copies printed.

BR-SOV/5948
Kuz'min, A. D.
THE PRESENT STATE IN THE MANUFACTURE OF ROLLING EQUIPMENT (Sovremennoye sostoyaniye prokatnogo mashinostroyeniya) Moscow, Mashgiz, 1961. 318p. 4000 copies printed.

BR-SOV/5950
Nesmeyanov, An. N.
PRACTICAL HANDBOOK ON RADIOCHEMISTRY. SUPPLEMENTARY VOLUME (Prakticheskoye rukovodstvo po radiokhimii. Dopolnitel'nyy tom) Moscow, Goskhimizdat, 1961. 322p. Errata slip inserted. 10,000 copies printed.

BR-SOV/5951
Polevoy, Vyacheslav Alekseyevich
PRINCIPLES FOR THE MATHEMATICAL PROCESSING OF RADIOGEODETIC SURVEY RESULTS (Osnovy matematicheskoy obrabotki rezul'tatov radiogeodezicheskikh izmereniy) Moscow, Geodezizdat, 1961. 205p. Errata slip inserted. 4200 copies printed.

BR-SOV/5955
Charnyy, Isaak Abramovich
FUNDAMENTALS OF GAS DYNAMICS (Osnovy gazovoy dinamiki) Moscow, Gostoptekhizdat, 1961. 199p. Errata slip inserted. 6200 copies printed.

TRANSLATIONS IN PROCESS

Avlasenko [Ya].
HYDRAULIC HOISTING OF COAL IN PIPELINES (Ugol' Idet po Trubam).
PL-480 Master Uglya (USSR) 1960, v. 9, no. 9, p. 9.

Babushkina, M. D., Babaev, E. V. and others.
AN INDUSTRIAL TYPE BUBBLING COLUMN FOR THE PRODUCTION OF SULFURIUS ACID BY THE MILK OF LIME METHOD (Promyshlennaya Barbotazhnaya Kolonna dlya Polucheniya Sul'fitnoi Kisloty po Izvestkovomolochnomu Sposobu).
PL-480 Bumazhnaya Promyshlennost' (USSR) 1959 [v. 34] no. 6, p. 12-15.

Gedroits, K. K.
CHEMICAL ANALYSIS OF SOILS, VOL. 2.
PL-480 mono. Khimicheskii Analiz Pochvy, v. 2, Moscow, 1955, 615p.

Geer, V. E. and Gruba, V. I.
IMPROVEMENTS AND CALCULATIONS FOR THE SUCTION APPARATUS IN HYDRAULIC HOIST INSTALLATIONS (Usovershenstvovanie i Raschet Vsasyvayushche i Sistemy Gidrotransportnykh Ustanovok).
PL-480 Ugol' (USSR) 1961, v. 36, no. 9, p. 36-40.

Gerasimov, I. P.
CINNAMON-BROWN SOILS OF DRY FORESTS AND SHRUB MEADOW STEPPES (Peregnoino-Karbonatnye Pochy Sochinskogo Raiona i Perekhod Ikh Burye Lesnye Pochvy).
PL-480 Akademiya Nauk SSSR. Pochvennyi Institut. Trudy, 1949, v. 30, p. 253-261.

Gerasimov, I. P.
GLEY PSEUDO-PODZOLIC SOILS OF CENTRAL EUROPE AND THE FORMATION OF TWO-COMPONENT SURFACE DEPOSITS (Gleevye Psevdopodzoly Tsentral'noi Evropy i Obrazovanie Dvuchlennykh Pokrovnykh Nanosov).
PL-480 Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya, 1959, no. 3, p. 20-30.

Girnik, D. V.
USE OF ISOTOPES IN STUDYING THE BLOOMING AND NECTAR EXCRETION IN THE LINDEN TREE.
PL-480 mono. Fiziol[ogiya] Rast[enii] Agrokhim[iya] Pochvoved[enie] (Trudy Vsesoyuzn[oi] Nauch[no]-Tekh-Tekh[nicheskoi] Konf[erentsii] po Primeneniyu Radioaktivnykh i Stabil'nykh Izotopov i Izluchenii v Narod[nom] Khoz[yaistve] i Nauke [Moscow, 4-12 Apr 57]) 1958, p. 143-147.

Glazov, A. N.
USING RADIOACTIVE ISOTOPES FOR ENGINEERING SURVEYS. (Ispol'sovanie Radioaktivnykh Izotopov v Praktike Inzhenernykh Izyskanii).
PL-480 Gidrotekhnika i Melioratsiya (USSR) 1956, v. 8, no. 9, p. 13-19.

Kazakov, N. I.
A DEVICE FOR HYDRAULIC HOISTING OF HARD AND ABRASIVE STONES (Ustanovka dlya Gidroped'ema Kroploi i Abrazivnoi Porody).
PL-480 Gornyi Zhurnal (USSR) 1959, no. 9, p. 44-47.

Komarov, F. P.
ADVANCES IN THE OXIDATION OF CELLULOSE.
PL-480 Bumazh[naya] Prom[yshlennost'] (USSR) 1953, v. 28, no. 1, p. 6-13.

Konstantinov, A. R.
BASIS FOR THE METHODOLOGY OF COMPUTING EVAPORATION FROM METEOROLOGICAL DATA (Obosnovanie Methodiki Rascheta Ispareniya po Dannym Meteorologicheskikh Stantsii).
PL-480 Gosudarstvennyi Gidrologicheskii Institut. Trudy (USSR) 1956, v. 54, p. 5-74.

Koslov, P. V. and Rosskova, E. F.
MOLECULAR-WEIGHT EFFECTS ON THE TRANSFORMATION TEMPERATURE OF NITROCELLULOSE.
PL-480 Akad[emiya] Nauk SSSR. Doklady, 1954, v. 99, p. 105-108.

Kozlov, P. V. and Rosskova, E. F.
EFFECT OF LOW-MOLECULAR-WEIGHT COMPOUNDS ON THE DEFORMATION OF NITROCELLULOSE OVER A WIDE RANGE OF TEMPERATURES.
PL-480 Akad[emiya] Nauk SSSR. Doklady, 1954, v. 95, p. 583-586.

Kroth, Werner.
THE SYSTEM OF FOREST TAXATION AND TAX IMPACT UPON PRIVATE FOREST MANAGEMENT IN SEVERAL EUROPEAN COUNTRIES.
PL-480 mono. Die Systeme der Waldbesteurerung und die Steuerliche Belastung Privater Forstbetriebe in Einigen Europaischen Lendern, Munich, 1960, 435p.

Kuprin, A. I. and Da-Dzhun, T.
EXPERIMENTAL INVESTIGATIONS ON THE PARAMETER OF JOINT HYDRAULIC TRANSPORT OF COAL AND ROCK IN FLUMES (Eksperimental'nye Issledovaniya Osnovnykh Parametrov Sovmestnogo Gidravlicheskogo Transporta Uglya i Porody po Zhelobam).
PL-480 Izvestiya Vysshikh Uchebnykh Zavedenii. Gornyi Zhurnal (USSR) 1961, no. 1, p. 5-12.

Kursanov, A. L.
VITAMIN RESOURCES AND THEIR UTILIZATION: VITAMIN P- ITS PROPERTIES AND APPLICATION.
PL-480 mono. Vitaminnye Resursy i Ikh Isnol'zovanie; Vitamin P-Ego Svoistva i Nrimenenie, Moscow, 1959, 282p.

Kurakina, L. I.
THE INFLUENCE OF FERTILIZERS ON THE GROWTH AND DEVELOPMENT OF LARCH SEEDLINGS (Vliyanie Udobrenii na Rost i Razvitie Seyantsev Listvennitsyi).
PL-480 Bot[anicheskii] Z[hurnal]. (USSR) 1957, v. 42, no. 1, p. 68-72.

Leman, V. M.
CULTIVATION OF SEEDLINGS OF WOODY SPECIES BY ELECTRIC ILLUMINATION.
PL-480 Fiziologiya Rastenii (USSR) 1955 [v. 2] no. 10, p. 91-100.

Mogilevskii, V. I.
IMPROVEMENT TO HYDRAULIC SHAFT HOISTING (Sovershenstvovanie Tekhnologicheskikh Skhem Gidroped'ema).
PL-480 Ugol' Ukrainy (USSR) 1961, v. 5, no. 4, p. 23-24.

Molchanov, A. A.
THE HYDROLOGIC-ROLE OF FORESTS.
PL-480 mono. [Gidrologicheskaya Rol' Lesa] Moscow, 1960, 464p.

Nikol'skii, N. N.
SOIL SCIENCE, A METHODS HANDBOOK.
PL-480 mono. Pochvovedenie; Posobie dlya Prakticheskikh Zanyatii, Moscow, 1959, 320p.

Ostrovskaya, L. K., Geller, B. A. and others.
UTILIZATION OF THE STABLE NITROGEN ISOTOPE N^{15} FOR STUDYING THE IMPORTANCE OF COPPER IN THE ASSIMILATION OF AMMONIACAL AND NITRATE NITROGEN BY PLANTS.
PL-480 mono. Fiziol[ogiya] Rast[enii] Agrokhim[iya] Pochvoved[enie] (Trudy Vsesoyuzn[oi] Nauch[no]-Tekh[nicheskoi] Konf[erentsii] po Primeneniyu Radioaktivnykh i Stabil'nykh Izotopov i Izluchenii v Narod[nom] Khoz[yaistve] i Nauke [Moscow, 4-12 Apr 57]) 1958, p. 168-176.

Pavlovskii, E. N.
NATURAL ENDEMIC FOCI OF INFECTION IN MAN.
PL-480 mono. Prirodnoochagovye Bolezni Cheloveka, Moscow, 1960, 326p.

Psenitsnyi, I. D. and Trainis, V. V.
HYDRAULIC TRANSPORT OF LARGE COAL IN FINE COAL SLURRY (Gidrotransport Kuskovogo Uglya i Plastichno-Vyazkom Ugol'nom Shlame).
PL-480 Ugol' (USSR) 1960, v. 35, no. 7, p. 48-53.

Rubenchik, L. I.
AZOTOBAKTER AND ITS USE IN AGRICULTURE.
PL-480 mono. Azotobakter i Ego Primenenie v Sel'skom Khozyaistve, Kiev, 1960, 327p.

Silin, P. M.
TECHNOLOGY OF BEST SUGAR AND REFINED SUGAR PRODUCTION.
PL-480 mono. Tekhnologiya Sveklosakharnogo i Rafinadnogo Proizvodstva, Moscow, 1958, 601p.

Stakheeva-Kaverzneva, E. D.
CHEMICAL CHANGES OF CELLULOSE MACROMOLECULE UNDER THE ACTION OF OXIDIZING AGENTS. V. PROOF OF EXISTENCE OF ALPHA-HYDROXYMON HYDROXYMONOKETONE GROUPS IN OXYCELLULOSE.
PL-480 Akad[emiya] Nauk SSSR. Otdel[enie] Khim-[icheskikh] Nauk. Izvest[iya] 1951, p. 791-794.

Stakheeva-Kaverzneva, E. D. and Salova, A. S.
CHEMICAL CHANGES OF CELLULOSE MACROMOLECULE UNDER THE ACTION OF OXIDIZING AGENTS. IV. LACTONE LINKS IN THE MACROMOLECULE OF CARBOXYL GROUPS BY CONDENSATION WITH HYDROXYLAMINE.
PL-480 Akad[emiya] Nauk SSSR. Otdel[enie] Khim-[icheskikh] Nauk. I[zvestiya] 1951, p. 782-790.

Stakheeva-Kaverzneva, E. D.
KETONE CROUPS IN OXIDIZED MOLECULES OF CELLULOSE.
PL-480 Akad[emiya] Nauk SSSR. Doklady, 1949, v. 68, p. 865-867.

Stakheeva-Kaverzneva, E. D.
NEW DATA ON THE CHEMICAL COMPOSITION OF OXYCELLULOSE.
PL-480 Akad[emiya] Nauk SSSR. Doklady, 1951, v. 78, p. 481-483.

Timofeev, M. P.
CALCULATION OF COMPONENTS OF HEAT BALANCE OF LIMITED RESERVOIRS (O Raschete Sostavlisyushchikh Teplovogo Balansa Ogranichennykh Vodoemov).
PL-480 Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy (USSR) 1956, v. 59(121).

Timofeev, V. P.
THE THEORY OF INTERMEDIATE FELLINGS (K Teorii Teorii Rubok Uhoda za Lesom)
PL-480 [Akademiya Nauk SSSR]. Inst[itut] Les[a]. Trud[y] 1958, v. 37, p. 46-66.

Trainis, V. V.
HYDRAULIC HOISTING OF RUN-OF-MINE COAL UNDER PRESSURE (Opredelenie Parametrov Napernogo Gidrotransporta Ryadovogo Uglya).
PL-480 Ugol' (USSR) 1961, v. 36, no. 9, p. 40-41.

Tribunskaya, A. Ya.
UPTAKE OF N & P BY SCOTCH PINE SEEDLING ON GREY FOREST SOILS.
PL-480 Akad[emiya] Nauk SSSR. D[oklady] 1954, v. 97, no. 5, p. 927-930.

Vitkevich, V. I.
AGRICULTURAL METEOROLOGY.
PL-480 mon. Sel'skokhozyaistvennaya Meteorologiya, Moscow, 1960, 472p.

Yakovleva, N. I.
CALCULATION OF VARIATION IN TEMPERATURE AND AIR HUMIDITY AND THE COMPONENTS OF HEAT BALANCE OF A RESERVOIR SURFACE (Raschet Izmenenii Temperatury i Vlazhnosti Vozdukha i Sostavlyayushchikh Teplovogo Balansa Poverkhnosti Vodeema).
PL-480 Glavnaya Geofizicheskaya Observatorya, Leningrad. Trudy (USSR) 1957, v. 71(133)[p. 112-128].

Zosim, Z. L.
THE INFLUENCE OF THERMAL DESTRUCTION OF PULP ON THE REMOVAL OF INORGANIC ADDITIVES FROM IT (Vliyanie Termodestruktsii Tsellyulozy na Udalenie iz Nee Mineral'nykh Primesei).
PL-480 Bumazhnaya Promyshlennost' (USSR) 1959, [v. 34] no. 7, p. 9.

PERIODICALS TRANSLATED COVER-TO-COVER

For basic list of Periodicals Translated Cover-to-Cover see Technical Translations Volume 8, Number 1.

This basic list is kept up-to-date by giving only changes in the subsequent issues of Technical Translations.

No changes are necessary for this issue.